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FAO REGIONAL CONFERENCE FOR EUROPE

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Building resilience of agrifood systems

Executive summary

Today's agrifood systems face an increasing probability of simultaneous global breadbasket failures, which could trigger systemic and potentially catastrophic disruptions in food production. In Europe and Central Asia, environmental, biological and anthropogenic risks are intensifying and often simultaneously co-occur, creating unprecedented challenges for agrifood systems. The interconnected nature of modern agrifood systems means that a disaster affecting one component can trigger cascading effects through multiple pathways, often resulting in impacts greater than the sum of individual effects.[1] These risks are compounded by geopolitical tensions and policy shifts that destabilize markets and trade flows, with specific impacts on the most vulnerable population groups – such as women, youth and smallholders – whose differential needs are not fully considered[2] due to a lack of data.[3] The increasing concurrence of risks calls for integrated approaches to multi-risk monitoring, which is the focus of this paper.

This background document reviews progress made by FAO and Member Nations in Europe and Central Asia on strengthening the resilience of agrifood systems.[4] It proposes that attention be focused on three priority actions to address emerging and persistent risks: enhancing multi-risk monitoring, mainstreaming equity-focused approaches and minimising data gaps to drive evidence-based decision-making. The document invites Member Nations to discuss their plans to

[1] FAO. 2025. *The Impact of Disasters on Agriculture and Food Security 2025 – Digital solutions for reducing risks and impacts.* Rome. https://doi.org/10.4060/cd7185en

[2] FAO. 2025. *National gender profile of agriculture and rural livelihoods – Montenegro*. Country Gender Assessment Series. Budapest. https://doi.org/10.4060/cd7254en

[3] FAO. 2025. *The Impact of Disasters on Agriculture and Food Security 2025 – Digital solutions for reducing risks and impacts.* Rome. https://doi.org/10.4060/cd7185en

[4] This discussion paper builds on the outcomes of the Thirty-fourth Session of the FAO Regional Conference for Europe, including its recommendations on strengthening resilience for agrifood systems transformation and the background paper FAO. 2024. *Building resilience through agrifood systems transformation*. FAO Regional Conference for Europe, Thirty-fourth Session, Rome, Italy, 14–17 May 2024. https://openknowledge.fao.org/server/api/core/bitstreams/e2089812-29f2-4b73-b94f-3761bcfdf5f3/content. This paper also includes background information on the nature of food systems in the ECA regions and defines the resilience of the agrifood system and its components.

Documents can be consulted at www.fao.org

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promote these priority actions and ways for further collaboration in building agrifood systems resilience.

Suggested action by the Regional Conference

The Regional Conference is invited to request that Members:

- invest in the adoption of multi-risk monitoring systems, as the existing systems are fragmented, focus on specific risks and do not consider the co-occurrence and relatedness of risks and disastrous events;
- develop and expand equity-focused assessments and integrate equity considerations into general assessments to address the differential needs and impacts of disasters on vulnerable groups, including women, youth, smallholders, persons with disabilities, minorities and migrants, which are currently absent or receive limited attention in the design of development and emergency programmes; and
- invest in upscaling data systems to address data gaps through the compilation of reliable datasets disaggregated by locality, gender and age groups, as effective action depends on the development of interventions anchored in robust risk-informed assessments.

The Regional Conference is invited to call upon FAO to:

- support Members in their efforts to strengthen the resilience of their agrifood systems to future shocks and stresses by developing and adapting frameworks and methodologies for multi-risk assessments, integrating multi-risk considerations into Regional Priority Programmes, supporting Members in incorporating equity-focused assessments and interventions, and establishing databases so that resilience policy is anchored in robust multi-risk assessments.

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I. Current landscape of multi-risk in the Europe and Central Asia region

1. Risks to agrifood systems are intensifying, both in numbers and in how they interact, creating unprecedented challenges for agrifood systems.[5] A recent example in the Europe and Central Asia (ECA) region is the convergence of the COVID-19 pandemic with the war in Ukraine. Although unrelated in origin and not entirely overlapping, the two events amplified each other: the compounded effects of the pandemic and war exacerbated financial instability and limited access to essential resources, raising food, energy and agricultural input prices and leading to increases in food insecurity for households in the subregion of Eastern Europe and Ukraine. This paper builds on the outcomes of the Thirty-fourth Session of the FAO Regional Conference for Europe and its recommendations on strengthening resilience for agrifood systems transformation.[6]

2. In the ECA region, risks manifest many patterns and tend to be geographically localized rather than countrywide crises, as very few large-scale emergency situations occurred in recent years (war in Ukraine and the earthquake in Türkiye being the exceptions). The manifestation of environmental, social and economic risks at the same place and time remains relatively rare in the region.[7] In contrast, the prevalence of economic risks remains high across ECA countries.[8] Co-occurring risks over two or three dimensions are observed in a limited number of countries,[9] with 14 out of 53 countries facing elevated risk in one dimension only.[10]

3. **Economic risk** is high in 12 countries, representing 24 percent of the region. This dimension is driven by volatility in growth and trade. Growth volatility is elevated in 20 countries, while 14 countries face a high risk of trade volatility.[11] Economic growth in Europe and Central Asia is projected to slow from 3.6 percent in 2024 to 2.7 percent in 2026, remaining below the 2010–2019 average.[12] [13] Heightened global policy uncertainty and adverse trade policy shifts represent key downside risks, with the potential to weigh on trade, capital flows and growth prospects across the region.[14]

4. High levels of **environmental risk** are observed in approximately 10 percent of countries in the region.[15] Earthquake risk is elevated in 23 countries, with Türkiye, Albania, Tajikistan, Greece,

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[6] FAO. 2024. *Report. Thirty-fourth Session of the FAO Regional Conference for Europe.* https://openknowledge.fao.org/server/api/core/bitstreams/5aec210a-a80a-4e4e-91c0-cc7d42d7171f/content; FAO. 2024. *Building resilience through agrifood systems transformation.* Thirty-fourth Session of the FAO Regional Conference for Europe. https://openknowledge.fao.org/server/api/core/bitstreams/e2089812-29f2-4b73-b94f-3761bcfdf5f3/content

[7] European Commission. 2025. INFORM Risk. In: *DRMKC – INFORM*. https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk. Mid-2025 release.

[8] World Bank Group. 2025. Economic indicators. In: *Indicators*. [Cited December 2025]. https://data.worldbank.org/indicator

[9] European Commission. 2025. INFORM Risk. In: *DRMKC – INFORM*. https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk. Mid-2025 release.

[10] European Commission. 2025. INFORM Risk. In: *DRMKC – INFORM.* https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk. Mid-2025 release.

[11] World Bank Group. 2025. Economic indicators. In: *Indicators*. [Cited December 2025]. https://data.worldbank.org/indicator

[12] World Bank. 2025. *Global Economic Prospects, June 2025.* Washington, DC, World Bank. https://thedocs.worldbank.org/en/doc/8bf0b62ec6bcb886d97295ad930059e9-0050012025/original/GEP-June-2025.pdf

[13] World Bank. 2025. *Europe and Central Asia Economic Update, January 2025.* Washington, DC, World Bank. https://thedocs.worldbank.org/en/doc/c50bc3c87bc2666b9e5fa6699b0b2849-0050012025/related/GEP-Jan-2025-Analysis-ECA.pdf

[14] World Bank. 2025. *Europe and Central Asia Economic Update, January 2025.* Washington, DC, World Bank. https://thedocs.worldbank.org/en/doc/c50bc3c87bc2666b9e5fa6699b0b2849-0050012025/related/GEP-Jan-2025-Analysis-ECA.pdf

[15] European Commission. 2025. INFORM Risk. In: *DRMKC – INFORM.* https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk. Mid-2025 release.

Azerbaijan and Italy recording the highest exposure. River flood risk is high in 36 countries,[16] with Netherlands (Kingdom of the), Russian Federation, Turkmenistan, Uzbekistan and Germany facing the greatest exposure.[17] Drought risk is high in ten countries, concentrated in the Caucasus and Central Asia, including Tajikistan, Uzbekistan, Kazakhstan, Kyrgyzstan, Republic of Moldova, Georgia, Armenia and Azerbaijan.[18] In Western Europe, low water levels in the Rhine and Danube rivers have caused delivery delays and price increases for essential agrifood products.[19] Wildfire is becoming an increasingly prominent environmental risk.[20] While the highest exposure is generally concentrated in the Mediterranean and Balkan countries, recent years of intensifying climate change indicate that wildfires are occurring even in areas that historically have not experienced them.[21]

5. Central Asia, especially, is a hotspot of compound climate–water–land risks, with slow-onset and chronic risks aggravating acute shocks. Countries are facing escalating challenges from water scarcity, compounded by temperatures that are rising at a rate faster than the global average.[22] The glaciers of Kyrgyzstan and Tajikistan, which supply water to millions of people across the region, are retreating at an alarming rate. Glacier areas in the region have decreased by 30 percent over the past 50 years, threatening long-term water supplies for downstream agriculture.[23] Water security challenges are particularly acute in Central Asia. Agricultural losses from poor irrigation management, waterlogging and salinization reach hundreds of millions of dollars annually in affected countries (such as Turkmenistan, Kazakhstan and Uzbekistan), while an estimated 680 000 ha of irrigated land has been lost to crop production across Central Asia.[24]

6. Biological risks, including transboundary animal diseases, zoonotic diseases and antimicrobial resistance,[25] represent a growing threat to agrifood systems in the region. Outbreaks of diseases such as foot-and-mouth disease, *peste des petits ruminants*[26] and African swine fever[27] disrupt livestock production, trade and rural livelihoods, while zoonotic pathogens and the emergence and spread of antimicrobial resistance, in addition, pose direct public health risks. Climate variability, ecosystem changes and increased animal movements heighten the risk of disease emergence and cross-border

[16] European Commission. 2025. INFORM Risk. In: *DRMKC – INFORM.* https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk. Mid-2025 release.
[17] World Bank. 2024. Urgent Investments in Water Security Critical for Climate Resilience in Europe and Central Asia. In: *News.* Washington, DC. https://www.worldbank.org/en/news/press-release/2024/12/12/urgent-investments-in-water-security-critical-for-climate-resilience-in-europe-and-central-asia
[18] European Commission. 2025. INFORM Risk. In: *DRMKC – INFORM.* https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk. Mid-2025 release.
[19] World Economic Forum. 2026. *Global Risks Report 2026.* https://www.weforum.org/publications/global-risks-report-2026
[20] World Bank. 2025. *Enhancing International Cooperation for Integrated Forest Fire Management.* https://thedocs.worldbank.org/en/doc/a2d0ab345adb3d2b65b981882a2abea2-0080012025/original/Forest-fire-Brochure-eng.pdf
[21] European Commission. 2023. *Wildfires in the European Union Situation in the 2023 wildfire season up to August 30th, 2023.* https://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/AGRI/DV/2023/08-30/EFFIS_analysis_fire_damages_2023v1_EN.pdf
[22] United Nations. 2026. Water – at the center of the climate crisis. In: *Climate Action.* https://www.un.org/en/climatechange/science/climate-issues/water
[23] Asia-Plus. 2025. Tajikistan's glaciers have lost 30% of their area: challenges and initiatives ahead of the international conference in Dushanbe. In: *Asia+*. https://asiaplus.news/en/2025/05/30/tajikistans-glaciers-have-lost-30-of-their-area-challenges-and-initiatives-ahead-of-the-international-conference-in-dushanbe/
[24] Dankova, R., Burton, M., Salman, M., Clark, A.K. & Pek, E. 2022. *Modernizing irrigation in Central Asia: concept and approaches*. Directions in Investment, No. 6. Rome, FAO and World Bank. https://doi.org/10.4060/cb8230en
[25] WHO. 2023. Antimicrobial resistance. In: *Fact sheets.* https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance
[26] FAO & WOAH. 2015. *Global Strategy for the Control and Eradication of PPR.* https://www.woah.org/app/uploads/2021/03/ppr-global-strategy-2015-03-28.pdf
[27] FAO & WOAH. 2020. *Global Control of African Swine Fever: A GF-TADs Initiative (2020–2025).* https://www.woah.org/app/uploads/2021/06/global-control-of-african-swine-fever-a-gf-tads-initiative-2020-2025.pdf

spread.[28] Major transboundary pest threats (such as locusts,[29] brown marmorated stink bugs,[30] box tree moths[31] fungal pathogens that cause pine dieback) encompass high-impact insects and emerging pathogen races with significant phytosanitary implications. Forests across the ECA region are increasingly exposed to a complex multi-risk environment, with climate-driven stressors such as rising temperatures, prolonged drought and declining tree vitality amplifying the spread and severity of forest pests and diseases. These pressures negatively affect the stability and resilience of forest ecosystems, leading to more frequent and intense outbreaks that threaten both timber and non-timber resources. In many areas, diseases affecting nut-producing species, including chestnut, walnut and other valuable non-timber forest products, pose a significant threat to biodiversity and to the rural economies that rely on these products for income, food security and cultural practices.

7. **Socially-induced risk** is high in a limited number of countries in the region. The war in Ukraine has triggered one of the fastest forced population movements since the Second World War, creating a severe humanitarian crisis. About 11 million people require humanitarian assistance,[32] and 5.9 million have sought refuge abroad.[33] At the same time, persistent gender disparities in access to resources, information, services and decision-making in the region's rural areas exacerbate vulnerabilities to shocks and limit the effectiveness of resilience efforts.[34]

8. Food security and nutrition outcomes vary considerably across Europe and Central Asia, with relatively favourable regional averages. The prevalence of undernourishment has remained below 2.5 percent in the region since 2006 – except for Central Asia, where it has progressively decreased from 13.1 percent in 2005 to 2.8 percent in 2024, well below the 2024 global average of 8.2 percent.[35] However, in 2024, approximately 98.1 million people (10.4 percent of the region's population) experienced moderate or severe food insecurity, with 22.4 million facing severe food insecurity.[36] In 2024, approximately 59.6 million people (6.3 percent of the population) could not afford a healthy diet, with the highest prevalences of unaffordability being in the Caucasus (15 percent) and Central Asia (14 percent).[37]

II. Pathways for monitoring multiple risks: from global frameworks and tools to regional solutions

9. Following guidance from the 2024 FAO Regional Conference for Europe, the growing concurrence of shocks calls for a transition towards integrated multi-risk monitoring approaches. The compounded nature of shocks[38] calls for innovative approaches to monitoring and managing multiple interacting risks. Although risks do not always manifest amplifying effects when they are separately monitored, looking forward it is essential to develop frameworks that capture their synergetic impact.

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[28] IPCC. 2022. *AR6 Working Group II Fact Sheet – Health* https://www.ipcc.ch/report/ar6/wg2/downloads/outreach/IPCC_AR6_WGII_FactSheet_Health.pdf
[29] FAO. 2024. *Technical Workshop on Locusts in Caucasus and Central Asia (CCA).* https://openknowledge.fao.org/server/api/core/bitstreams/c3d7d2b2-d13e-44cf-a142-817370b8854f/content
[30] EPPO. 2024. *Halyomorpha halys – EPPO Global Database*. https://gd.eppo.int/taxon/HALYHA
31 EPPO. 2024. *Cydalima perspectalis – EPPO Global Database.* https://gd.eppo.int/taxon/DPHNPE
[32] UNICEF. 2026. *Ukraine and refugee response.* https://www.unicef.org/media/177141/file/2026-HAC-Ukraine.pdf
[33] UNHCR. 2026. Four years on, employment and purpose can transform Ukrainian refugee lives in Europe. In: *Stories.* https://www.unhcr.org/ua/en/news/stories/four-years-employment-and-purpose-can-transform-ukrainian-refugee-lives-europe
[34] FAO. 2023. *Gender mainstreaming in climate investments in the agriculture, forestry and other land use sector in Europe and Central Asia – Regional resource guide.* Budapest. https://doi.org/10.4060/cc6412en
[35] FAO, IFAD, UNICEF, WFP and WHO. 2025. *The State of Food Security and Nutrition in the World 2025 – Addressing high food price inflation for food security and nutrition.* Rome. https://doi.org/10.4060/cd6008en
[36] FAO. 2025. FAOSTAT: Suite of Food Security Indicators. In: *FAOSTAT*. [Cited on 28 July 2025]. https://www.fao.org/faostat/en/#data/FS
[37] FAO. 2025. FAOSTAT: Cost and Affordability of a Healthy Diet (CoAHD). In: *FAOSTAT.* [Cited on 28 July 2025]. https://www.fao.org/faostat/en/#data/CAHD. Licence: CC-BY-4.0.
[38] FAO. 2025. *The Impact of Disasters on Agriculture and Food Security 2025 – Digital solutions for reducing risks and impacts.* Rome. https://doi.org/10.4060/cd7185en

Multi-risk monitoring refers to the use of integrated information platforms that address multiple, often simultaneous or cascading hazards.[39] By moving away from departmentalized planning, these integrated structures provide a more accurate representation of risk that informs decision-making across scales to prevent the creation of new vulnerabilities.[40]

10. Resilience requires a comprehensive approach that spans the entire risk management spectrum.[41] This implies that actions must operate at multiple scales – household, community, sectoral, national and regional – across value chains and agrifood systems while also considering the appropriate sequencing of actions over time. Given the compounded nature of risks, it is essential to adopt a systemic perspective that goes beyond isolated interventions, ensuring that household-level vulnerabilities, community dynamics and national policy frameworks are addressed in a coherent manner. Multi-risk monitoring should explicitly be linked to, among others, National Adaptation Plans, the implementation of nationally determined contributions and Enhanced Transparency Framework reporting under the Paris Agreement.[42]

Box 1: FAO Risk Monitor

The FAO Risk Monitor – Food Security Risk Intelligence and Early Warning Room, launched in August 2025, is a dynamic tool for monitoring and analysing food security risks and facilitating coordinated early detection, warning and response on a global, regional or country-specific scale. The tool is an open and transparent geographically based platform[43] covering a broad range of hazards: droughts, heatwaves, excess precipitation, floods, earthquakes, animal health, locusts, conflicts, etc. The tool provides a three-part perspective: real-time monitoring on ongoing risk; a profile of historical risk trends, aggregating data from the past 30 years; and forward-looking forecasts. The tool draws on information and integrates datasets from multiple sources, such as automated alerts, expert analyses and partner inputs. It allows for conducting exposure analyses, as it provides data on variables such as land cover, population density, food security and more. Indexes of food prices and economic risks are planned to be integrated in the future.

Designed to strengthen anticipatory action and rapid response, the FAO Risk Monitor links early-warning systems with humanitarian and development actors and public institutions to facilitate faster resource mobilization and targeted interventions. It establishes predefined triggers and thresholds that enable timely financial disbursements and operational responses, reducing the human and economic toll of crises. The platform provides open, transparent and evidence-based information as a global public good, contributing to the more agile, coordinated and effective management of emerging food security risks worldwide.

11. Developing early-warning systems is a vital pathway for providing timely analysis for intersectoral coordination during crises.[44] The integration of digital technologies, such as predictive artificial intelligence and big data analytics (using high-frequency data, validated and adjusted for

[39] FAO. 2025. *The Impact of Disasters on Agriculture and Food Security 2025 – Digital solutions for reducing risks and impacts.* Rome. https://doi.org/10.4060/cd7185en

[40] United Nations Office for Disaster Risk Reduction and CIMA Research Foundation. 2024. *Handbook on the Use of Risk Knowledge for Multi-Hazard Early Warning Systems.* Geneva. https://www.undrr.org/publication/handbook-use-risk-knowledge-multi-hazard-early-warning-systems

[41] United Nations. 2020. *UN Common Guidance on Helping Build Resilient Societies.* UNSDG. https://unsdg.un.org/sites/default/files/2021-09/UN-Resilience-Guidance-Final-Sept.pdf

[41] FAO. 2025. *FAO's response to the multiple crises in Europe and Central Asia.* (ECA/44/25/9/Rev1). Forty-fourth Session of the European Commission on Agriculture. Budapest. https://openknowledge.fao.org/server/api/core/bitstreams/64ff89ac-225e-48bd-9f80-e2e5bdf858e0/content

[42] United Nations Office for Disaster Risk Reduction. 2019. *Global Assessment Report on Disaster Risk Reduction 2019*. Geneva. https://gar.undrr.org/reports/2019-global-assessment-report-disaster-risk-reduction; FAO. 2021. Managing risks to build climate-smart and resilient agrifood value chains. Rome, FAO. https://www.fao.org/3/cb6358en/cb6358en.pdf

[43] https://riskmonitor.fao.org/

[44] FAO. 2025. *FAO's response to the multiple crises in Europe and Central Asia.* (ECA/44/25/9/Rev1). Forty-fourth Session of the European Commission on Agriculture. Budapest. https://openknowledge.fao.org/server/api/core/bitstreams/64ff89ac-225e-48bd-9f80-e2e5bdf858e0/content

national realities, from weather stations, drones and satellites) allows for the proactive modelling of climate and market risks.[45] Embedded diagnostics and digital twins may allow countries to model responses to stressors such as harvest failures or climate extremes.[46] Internet of things sensors and satellite data from the Sentinel-1 and Sentinel-2 missions allows for more frequent and complementary agricultural monitoring.[47]

12. In recent years, several countries across the ECA region have invested in building resilience in their agrifood systems. Piloted in Albania, Armenia, Bosnia and Herzegovina and Serbia, the Digital Villages Initiative is one example of projects that strengthen access to climate-smart advisory services and digital solutions for improved information.[48] [49] FAO also has supported training and technical assistance on transboundary pests and diseases in Kyrgyzstan,[50] Serbia,[51] Ukraine[52] and Uzbekistan.[53] Armenia, Azerbaijan, Kyrgyzstan, Tajikistan, Türkiye and other countries have sought opportunities for regional and transboundary cooperation,[54] [55] for example on One Health,[56] early warning on transboundary animal diseases,[57] the Caucasus and Central Asia Locust Management System (CCALM)[58] and forest health .[59] Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan have engaged together in the Central Asia Water and Land Nexus programme to strengthen water security.[60] North Macedonia, Serbia and Ukraine have taken steps to adopt or strengthen risk financing

[45] FAO. 2025. *Harnessing digital solutions for agrifood systems transformation.* (ECA/44/25/5/Rev1). Forty-fourth Session of the European Commission on Agriculture. https://openknowledge.fao.org/server/api/core/bitstreams/d49a0989-29a6-4f19-a6a9-647eae744dcf/content
[46] ICT. 2025. *ICT-AGRI-FOOD – Strategic Research & Innovation Agenda 2025*, May 2025. https://www.ictagrifood.eu/sites/default/files/deliverables/ICT-AGRI-FOOD%20SRIA%202025%20Preprint%20V1%2030%20May%202025.pdf
[47] European Commission. 2023. *Approved 28 CAP Strategic Plans (2023-2027) – Summary overview for 27 Member States: Facts and figures, June 2023.* https://agriculture.ec.europa.eu/system/files/2023-06/approved-28-cap-strategic-plans-2023-27.pdf; ICT. 2025. *ICT-AGRI-FOOD – Strategic Research & Innovation Agenda 2025, May 2025.* https://www.ictagrifood.eu/sites/default/files/deliverables/ICT-AGRI-FOOD%20SRIA%202025%20Preprint%20V1%2030%20May%202025.pdf
[48] FAO. 2024. Digital Villages in Europe and Central Asia. In: *Food and Agriculture Organization of the United Nations.* Budapest. https://www.fao.org/digital-villages-initiative/europe
[49] FAO. 2024. Digital Villages in Tajikistan. In: *Food and Agriculture Organization of the United Nations.* https://www.fao.org/digital-villages-initiative/europe/dvi-countries/dvi-in-tajikistan/en
[50] FAO. 2025. *FAO Kyrgyzstan Newsletter, 4th quarter 2025 – Issue #4.* https://openknowledge.fao.org/items/e4b73b1d-0fb7-4226-9427-176e3e80e35c
[51] FAO. 2024. *Comprehensive analysis of disaster risk reduction and management system for agriculture in Serbia.* Budapest. https://doi.org/10.4060/cc9072en
[52] FAO. 2024. *Ukraine: Emergency Response Plan, January–December 2024 – Protecting agricultural livelihoods of rural populations in war-affected areas*. Rome. https://doi.org/10.4060/cc9593en
[53] FAO. 2025. *FAO Kyrgyzstan Newsletter, 4th quarter 2025 – Issue #4.* https://openknowledge.fao.org/items/e4b73b1d-0fb7-4226-9427-176e3e80e35c
[54] FAO. 2024. *Central Asia Water and Land Nexus (CAWLN) for ecosystem restoration, improved natural resource management and increased resilience. Budapest.* https://openknowledge.fao.org/server/api/core/bitstreams/f25ae3cf-6238-45a6-9d8b-582ab1eac246/content
[55] FAO. 2024. *Ninth Session of the Central Asian and Caucasus Regional Fisheries and Aquaculture Commission (CACFish).* https://www.fao.org/fishery/en/meeting/41545
[56] FAO. 2024. Ukraine: Emergency Response Plan, January–December 2024. Rome. *Protecting agricultural livelihoods of rural populations in war-affected areas*. https://doi.org/10.4060/cc9593en
[57] FAO. 2025. Establishment of a Central Asian Animal Health Network (CAAHN). In: *Events.* [Cited 21 Aug 2025]. https://www.fao.org/europe/events/detail/Establishment-of-a-Central-Asian-Animal-Health-Network-(CAAHN)-/en
[58] FAO. 2026. Locusts in Caucasus and Central Asia. In: *Locust Watch.* https://www.fao.org/locusts-cca/current-situation/en/
[59] REUFIS. 2026. *Forest Invasive Species Network for Europe and Central Asia.* http://www.reufis.org/
[60] FAO. 2024. Central Asia Water and Land Nexus (CAWLN) for ecosystem restoration, improved natural resource management and increased resilience. https://openknowledge.fao.org/items/58083757-939d-403c-bc9b-c1b966f97247

and agricultural insurance programmes,[61] [62] [63] and Kyrgyzstan has engaged in developing preparedness plans.[64] Barriers to advancing resilience strategies include, among others, interinstitutional competition and fragmented jurisdiction[65] [66] and a lack of data, methodologies for assessments and extension services.[67]

13. European Union countries have established risk monitoring and early-warning systems that operate at both national and Europe-wide coordination levels.[68] Examples include the Galileo Emergency Warning Satellite Service, the European Forest Fire Information System, the European Food Awareness System, and the European Drought Observatories.[69] European Union countries conduct assessments of disaster impacts and potential risks through the European Union Civil Protection Mechanism, which obliges Member States to develop national risk assessments.[70] In March 2019, a joint reporting system was introduced for risk assessments and risk management capabilities, specifically focusing on risks with cross-border impacts.[71] The Climate-ADAPT platform, developed by the European Commission and the European Environment Agency, supports these efforts by sharing knowledge on climate impacts, adaptation strategies and specific case studies.[72]

14. Several risk-monitoring and early-warning systems also have been implemented in non-European Union countries in the ECA region. For example, Kyrgyzstan[73] and Uzbekistan[74] are piloting an improved methodology for updating electronic animal identification and traceability data to strengthen real-time disease surveillance. In addition, in Kyrgyzstan, the programme aims to establish robust management information systems to track agricultural outcomes and connect smallholders to remunerative market channels, mitigating the impacts of local price fluctuations.[75] The Republic of Moldova has installed autonomous agrometeorological monitoring stations to improve early warnings

[61] FAO. 2024. *Comprehensive analysis of disaster risk reduction and management system for agriculture in North Macedonia*. Revised edition. Budapest. https://openknowledge.fao.org/items/ef031af1-59d6-419d-8fa8-3ba922ab30b7
[62] FAO. 2024. *Comprehensive analysis of disaster risk reduction and management system for agriculture in Serbia.* Budapest. https://openknowledge.fao.org/items/2535da0d-b68f-4e9b-b8dd-86e2f8a96e59
[63] FAO. 2025. *Ukraine: Emergency and Early Recovery Response Plan 2026–2028.* Rome. https://openknowledge.fao.org/items/a78e5fd1-320d-4c6c-b1f9-3d84723875b7
[64] FAO. 2025. *FAO Kyrgyzstan Newsletter, 4th quarter 2025 – Issue #4.* https://openknowledge.fao.org/items/e4b73b1d-0fb7-4226-9427-176e3e80e35c
[65] FAO. 2024. *Comprehensive analysis of disaster risk reduction and management system for agriculture in North Macedonia.* Revised edition. Budapest. https://doi.org/10.4060/cd0711en
[66] FAO. 2025. *Comprehensive analysis of disaster risk reduction and management system for agriculture in Bosnia and Herzegovina.* Second edition. Budapest. https://openknowledge.fao.org/items/9268bfe8-72c1-4c9d-ae68-b901d75fc2b2
[67] FAO. 2024. *Comprehensive analysis of disaster risk reduction and management system for agriculture in Turkmenistan.* Budapest. https://doi.org/10.4060/cd1280e
[68] European Environment Agency. 2025. Economic losses from weather- and climate-related extremes in Europe. In: Indicators. https://www.eea.europa.eu/en/analysis/indicators/economic-losses-from-climate-related
[69] European Commission. 2026. European Early Warning and Information Systems. In: *Civil Protection.* https://civil-protection-humanitarian-aid.ec.europa.eu/what/civil-protection/european-early-warning-and-information-systems_en
[70] European Environment Agency. 2025. Economic losses from weather- and climate-related extremes in Europe. In: *Indicators*. https://www.eea.europa.eu/en/analysis/indicators/economic-losses-from-climate-related
[71] European Environment Agency. 2025. Economic losses from weather- and climate-related extremes in Europe. In: *Indicators.* https://www.eea.europa.eu/en/analysis/indicators/economic-losses-from-climate-related
[72] European Environment Agency. 2025. Economic losses from weather- and climate-related extremes in Europe. In: *Indicators.* https://www.eea.europa.eu/en/analysis/indicators/economic-losses-from-climate-related
[73] IFAD. 2025. *Kyrgyzstan. Access to markets project – Supervision Report.* https://www.ifad.org/documents/48415603/49455874/Kyrgyzstan%2B2000001232%2BATMP%2BSupervision%2BReport%2BDecember%2B2023.pdf/0bf2e407-94fc-82ca-651a-870477faa56e
[74] World Bank Group. 2024. *Uzbekistan Climate Adaptation and Resilience Assessment.* https://openknowledge.worldbank.org/entities/publication/f5cf5039-324c-4617-93d3-78d3d10bdc83
[75] IFAD. 2025. Kyrgyzstan. Access to markets project – Supervision Report. *https://www.ifad.org/en/w/corporate-documents/projects-programmes/kyrgyzstan-2000001232-atmp-supervision-report-december-2023*

for frost, drought and floods and finalized a pilot project to develop local climate change adaptation and disaster risk reduction plans for seven district centres.[76]

15. Kazakhstan operates several early-warning systems. The Committee of Veterinary Control and Supervision monitors epizootic events and food safety, for example. In addition, hazardous meteorological phenomena are monitored and forecasted by the National Hydrometeorological Service, and a system for forecasting and modelling floods is being developed by the Ministry of Artificial Intelligence and Digital Development.[77]

16. Türkiye utilises the Agricultural Frost Warning System to provide daily risk maps for crop protection.[78] The Turkish State Meteorological Service operates the Drought Monitoring System and Flash Flood Guidance System for early hazard detection.[79] It also operates the Meteorological Early Warning System for Forest Fires, producing short-term fire danger maps and indicators that are shared with the General Directorate of Forestry for operational planning and preparedness.[80] Additionally, projects are developing a dedicated web portal and modelling for tracking agricultural drought.[81]

17. Countries can build on global multi-hazard warning systems such as the Global Disaster Alert and Coordination System , which provides a unified traffic-light alert level for seven major hazards (including earthquakes, floods and wildfires) based on hazard magnitude and population vulnerability.[82] Global and regional observatories, such as the Group of Twenty Agricultural Market Information System and the European Union Agrifood Chain Observatory, provide transparency and coordination to minimize market disruptions.[83]

18. Strengthening biological risk monitoring requires integrated surveillance systems that connect animal and plant health, public health and food safety authorities under a One Health framework. Integrating veterinary surveillance data, laboratory reporting systems and food safety monitoring platforms enhances early detection of cross-border outbreaks and emerging resistance patterns.[84]

19. Under an FAO programme to improve national and regional locust management in the Caucasus and Central Asia, innovative technologies and digital geospatial tools have been developed for locust monitoring. These include the Automated System for Data Collection, which enables real-time field data collection, and the geographic information system CCALM, which is fed by digitally collected ground data as well as meteorological and other satellite data for analysis and forecasting. Both systems have been gradually introduced to all Caucasus and Central Asia countries. As a result, digital data collection increased from 165 records from five the Caucasus and Central Asia countries in 2016 to 81 127 reports from ten countries in 2025. The introduction of these open-source and free-of-charge revolutionary

[76] UNDP. 2025. Republic of Moldova becomes more resilient to climate risks with support from Japan and UNDP Moldova. In: *UNDP Moldova.* https://www.undp.org/moldova/press-releases/republic-moldova-becomes-more-resilient-climate-risks-support-japan-and-undp-moldova
[77] FAO. 2022. *Comprehensive analysis of the disaster risk reduction system for the agricultural sector in Kazakhstan.* Budapest. https://doi.org/10.4060/cb8757en
[78] Türkiye Ministry of Environment, Urbanization and Climate Change. 2024. *First Biennial Transparency Report of Türkiye.* https://unfccc.int/sites/default/files/resource/Türkiye_1BTR.pdf
[79] Türkiye Ministry of Environment, Urbanization and Climate Change. 2024. *First Biennial Transparency Report of Türkiye.* https://unfccc.int/sites/default/files/resource/Türkiye_1BTR.pdf
[80] Türkiye Ministry of Environment, Urbanization and Climate Change. 2024. *First Biennial Transparency Report of Türkiye.* https://unfccc.int/sites/default/files/resource/Türkiye_1BTR.pdf
[81] Türkiye Ministry of Agriculture and Forestry, Directorate General of State Hydraulic Works. 2024. *Türkiye Flood and Drought Management Project (P179313) Stakeholder Engagement Plan (SEP).* https://cdniys.tarimorman.gov.tr/api/File/GetGaleriFile/425/DosyaGaleri/6201/tfdmp_stakeholder_engagement_plan_may_2024.pdf
[82] European Union. 2025. *Multi-hazard Early Warning System Global Disaster Alert and Coordination System (GDACS) - User Manual.* https://data.europa.eu/doi/10.2760/1461943
[83] FAO. 2025. *FAO's response to the multiple crises in Europe and Central Asia*. (ECA/44/25/9/Rev1). https://www.fao.org/events/detail/44th-session-of-the-european-commission-on-agriculture/en
[84] WHO. 2026. One Health. In: *World Health Organization*. https://www.who.int/health-topics/one-health#tab=tab_1.

systems for locust management in the region represent a breakthrough towards early warning and anticipated reaction, which are the basis of the locust preventive control strategy promoted by FAO.[85] [86]

20. Recent regional efforts, including the survey on chestnut blight fungus in Armenia, Azerbaijan, Georgia and selected Balkan countries, have strengthened understanding of the spread dynamics and potential biological control options for chestnut blight. Building on these technical foundations, a regional study on Early Warning Early Action systems was conducted to improve preventative capacities and rapid detection of invasive species. Meanwhile, a complementary regional assessment on contingency planning and pest-specific response frameworks has highlighted the need for harmonized, cross-border preparedness. These initiatives collectively contribute to more resilient forest health management, helping safeguard the forest ecosystems vital to rural livelihoods throughout the region.

21. FAO conducts post-shock assessments in ECA countries to evaluate compounding crises such as war and climate shocks. Examples include Rapid Damage and Needs Assessments in Ukraine (2024), COVID-19 in Tajikistan (2022) and recovery following the 2023 earthquakes in Türkiye.[87] As for addressing data gaps, FAO facilitated the installation in Kyrgyzstan of remote sensors and associated software to enable the continuous, real-time monitoring of reservoir water levels.[88] With help from FAO, Serbia is improving the integration of disaster risk reduction and climate-smart agriculture into its information systems.[89]

22. The war in Ukraine has generated a multidimensional impact on food security by disrupting global commodity markets while simultaneously damaging domestic agricultural capacity.[90] FAO operates a large emergency portfolio in Ukraine, including a digital early-warning and response platform that utilises real-time data and satellite imagery to support adaptive action.[91] [92]

23. FAO has identified investing in satellite imagery-based monitoring as a priority, and a project was designed to tackle it across five major Central Asia countries.[93] Another FAO risk monitor tool is the Climate Risk Toolbox, which supports users with analysis and data comparison on climate risks and identifying hazard probability and the exposure and vulnerability of targeted agricultural systems and communities.[94] FAO also contributes to the Climate and Agriculture Risk Visualization and Assessment tool, which provides accessible, high-resolution and agriculture-relevant climate indices.[95] These tools support countries in translating climate risk information into policy planning, project development and climate finance programming processes.

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[85] FAO. 2026. Locust Watch in Caucasus and Central Asia. In: *Locust Watch.* https://www.fao.org/locusts-cca/en/

[86] FAO. 2025. *Report – Technical Workshop on Locust in Caucasus and Central Asia (CCA) Tashkent, Uzbekistan, 10-14 November 2025.* https://openknowledge.fao.org/server/api/core/bitstreams/605bdb78-58e7-481e-8a0f-cfcad113a108/content

[87] FAO. 2025. *FAO's response to the multiple crises in Europe and Central Asia*. (ECA/44/25/9/Rev1). https://www.fao.org/events/detail/44th-session-of-the-european-commission-on-agriculture/en

[88] FAO. 2024. *The role of innovation and digitalization in the sustainable use of natural resources to accelerate the implementation of climate-resilient and low-emission pathways in agrifood systems.* Thirty-fourth Session of the FAO Regional Conference for Europe. Rome. https://www.fao.org/3/no474en/no474en.pdf

[89] FAO. 2024. *Comprehensive analysis of disaster risk reduction and management system for agriculture in Serbia.* Budapest. https://doi.org/10.4060/cc9072en

[90] Nanitashvili, T. 2026. *The war in Ukraine and its multidimensional impact on food security in Europe and Central Asia.* Budapest, FAO. https://doi.org/10.4060/cd8182en

[91] FAO. 2025. Ukraine: Emergency and Early Recovery Response Plan 2026–2028. Rome. *https://openknowledge.fao.org/items/a78e5fd1-320d-4c6c-b1f9-3d84723875b7*

[92] Nanitashvili, T. 2026. *The war in Ukraine and its multidimensional impact on food security in Europe and Central Asia.* Budapest, FAO. https://doi.org/10.4060/cd8182en

[93] FAO. 2024. *Central Asia Water and Land Nexus (CAWLN) for ecosystem restoration, improved natural resource management and increased resilience*. https://www.fao.org/3/cc9615en/cc9615en.pdf

[94] Gialletti, A., Alvar-Beltrán, J., Setti, A., Allen, T., Soldan, R. and Neretin, L. 2025. *Climate Risk Toolbox – Guiding material for climate risk screening.* Second edition. Rome. https://doi.org/10.4060/cd4543en

[95] FAO. 2026. *CAVA.* https://cavaplatform.fao.org/

III. Examples from the region on FAO's technical and equity-focused approaches

24. FAO supports countries in Europe and Central Asia through technical assistance, capacity development and evidence-based policy guidance to strengthen agrifood system resilience. Its work includes risk monitoring, climate adaptation, disaster risk reduction, One Health and equity-focused intervention addressing the structural vulnerabilities of women, youth and smallholders.

25. FAO's field projects addressing resilience building in the agriculture sector in the ECA region have increased progressively over the past ten years,[96] though only a small number are operated in humanitarian contexts (primarily related to the impact of the war in Ukraine). The focus in the region has remained primarily on strengthening resilience to: a) climate change and extreme weather events; b) natural resources degradation; and c) the spread of animal and plant pests and diseases in crops, livestock, forestry and, to a limited extent, fisheries. Some resilience-related projects have tackled equity challenges, with a particular focus on at-risk and vulnerable women and small-scale farmers. However, people with disabilities, minorities, migrants and youth rarely have been explicitly targeted.

26. Gender inequality is a structural driver of vulnerability in agrifood systems in the region. Rural women have lower recognition as farmers, unequal access to resources and opportunities, and disproportionate unpaid care responsibilities, often rendering them invisible in risk assessments and policy responses. Although their share in agricultural labour is high, their share in farm or land ownership is usually lower,[97] limiting access to training, finance and support schemes (generally, only registered farmers are eligible for assistance).[98] Lessons from various aid programmes indicate that the lack of gender-responsive design and approaches can result in structural conditions that systematically favour men, undermining women's participation and benefits. At the same time, FAO's experience highlights several good practices. For example, FAO strategy documents on refugee livelihoods in

[96] This section draws on the projects list from FAO's Field Programme Management Information System (FPMIS) for the ECA region in 2024–2025, where 62 projects are classified as resilience related either in their title or in their objectives. The projects are also listed for each country under the "Programmes and projects" page of the FAO Regional Office for Europe and Central Asia at https://www.fao.org/europe/work-in-the-region/programmes-and-projects/en.

[97] For example: in Montenegro, women represent 55 percent of the total labour force on family agricultural holdings but constitute just 12.9 percent of all family agricultural holding managers and holders. (FAO. 2025. *National gender profile of agriculture and rural livelihoods – Montenegro.* Country Gender Assessment Series. Budapest. https://doi.org/10.4060/cd7254en). In Tajikistan, women represent 59 percent of the total agricultural labour force but own 22.4 percent of *dehkan* farms (FAO. 2025. *National gender profile of agriculture and rural livelihoods – Republic of Tajikistan.* Country Gender Assessment Series. Budapest. https://doi.org/10.4060/cd6263en). In Uzbekistan, Women represent 43.2 percent of total employees in agriculture, but fewer than 6 percent of the heads of registered farming enterprises are women (FAO. 2025. *National gender profile of agriculture and rural livelihoods – Uzbekistan.* Country Gender Assessment Series. Budapest. https://doi.org/10.4060/cd7898en).

[98] FAO. 2025. *National gender profile of agriculture and rural livelihoods: Georgia.* Country Gender Assessment Series. Budapest. https://doi.org/10.4060/cd3777en
FAO. 2025. *National gender profile of agriculture and rural livelihoods – Montenegro.* Country Gender Assessment Series. Budapest. https://doi.org/10.4060/cd7254en
FAO. 2025. *National gender profile of agriculture and rural livelihoods – Republic of Belarus.* Country Gender Assessment Series. Budapest. https://doi.org/10.4060/cd5325en
FAO. 2025. *National gender profile of agriculture and rural livelihoods – Republic of Tajikistan.* Country Gender Assessment Series. Budapest. https://doi.org/10.4060/cd6263en
FAO. 2025. *National gender profile of agriculture and rural livelihoods – Uzbekistan.* Country Gender Assessment Series. Budapest. https://doi.org/10.4060/cd7898en
FAO and UN Women. 2024. *Gender-Responsive Value Chain Analysis in Albania — Case studies of Elbasan, Leskovik, and Puka.* Budapest. https://doi.org/10.4060/cd1282en
FAO and UN Women. 2025. *Monitoring and reporting of gender equality in landownership in Albania – The empowerment of rural women, gender-responsive land policies and the implementation of Sustainable Development Goal Indicators 5.a.1 and 5.a.2.* Assessment report 2025. Budapest. https://doi.org/10.4060/cd5891en
FAO and UN Women. 2024. *Towards gender-responsive agricultural extension services in Albania — Assessment report.* Budapest. https://doi.org/10.4060/cc7701en

Türkiye informed the development of vocational training programmes for refugees and host communities, contributing to improved employment and livelihood opportunities for women.[99] In response to the 2023 earthquakes, FAO Türkiye Earthquake Response and Recovery Plan (2023–2026) effectively integrates gender-responsive approaches, recognising the key role of rural women in rebuilding livelihoods. The plan supports women-led cooperatives, livelihood recovery for women farmers, and targeted assistance to vulnerable rural households.[100] It is necessary to explicitly account for differentiated exposure and capacities among women and men, youth, smallholders and other vulnerable groups, as their access to resources, services, information and decision-making often shapes their ability to anticipate, absorb and recover from shocks. Tools such as the Early Warnings for All initiative[101] aim to promote universal access to multi-hazard early warning systems. Digital registries and e-governance platforms serve as a critical pathway for monitoring the needs of vulnerable groups such as smallholders and for facilitating the delivery of subsidies to them during shocks.[102]

27. Several initiatives and frameworks have been implemented in recent years to improve the resilience of rural women across the ECA region. Bosnia and Herzegovina, Turkmenistan and Ukraine have conducted or updated risk assessments to identify the main hazards and vulnerable population groups.[103] [104] [105] In May 2025, FAO and the parliament of Montenegro convened the first Rural Women's Parliament, issuing a landmark declaration recognising the role of rural women in food security and decision-making[106]. In Uzbekistan, the Ministry of Agriculture developed, jointly with FAO, the country's first-ever Gender Strategy for Ensuring Equality in Agriculture and Expanding the Rights and Opportunities of Women.[107] In Georgia, FAO is partnering with the government to provide technical training to women smallholder farmers on dairy quality and safety standards.[108] All the above are good examples for mainstreaming equity approaches into action; however, more can be done to integrate the needs of vulnerable groups and smallholders into consideration.

28. A group whose special needs are often not recognized is young people. Youth are disproportionately concentrated in informal, seasonal and low-paid work, frequently without the protection of social safety nets.[109] The youth period is a critical phase for brain development and

[99] FAO. 2018. *Syrian Refugee Resilience Plan (2018–2019).* https://openknowledge.fao.org/handle/20.500.14283/i9240en; FAO. 2019. Syrian Refugee Resilience Plan 2019-2020. https://openknowledge.fao.org/handle/20.500.14283/ca4298en; FAO. 2021. Syrian and Turkish women build a cooperative and economic independence in Turkey. In: *Family Farming Knowledge Platform.* https://www.fao.org/family-farming/detail/en/c/1412073/

[100] FAO. 2026. Türkiye. In: *Emergencies.* https://www.fao.org/turkiye/emergencies/impact-assessment-after-the-earthquakes-in-t%C3%BCrkiye/en

[101] Early Warnings for All. 2026. *Early Warnings for All.* https://earlywarningsforall.org/site/early-warnings-all

[102] FAO. 2025. *Harnessing digital solutions for agrifood systems transformation.* (ECA/44/25/5/Rev1). Forty-fourth Session of the European Commission on Agriculture. https://openknowledge.fao.org/server/api/core/bitstreams/d49a0989-29a6-4f19-a6a9-647eae744dcf/content

[103] FAO. 2025. *Ukraine: Emergency and Early Recovery Response Plan 2026–2028.* Rome. https://openknowledge.fao.org/handle/20.500.14283/cd7950en

[104] FAO. 2024. *Comprehensive analysis of disaster risk reduction and management system for agriculture in Turkmenistan.* Budapest. https://doi.org/10.4060/cd1280en

[105] FAO. 2025. *Comprehensive analysis of disaster risk reduction and management system for agriculture in Bosnia and Herzegovina.* Second edition. Budapest. https://doi.org/10.4060/cd4204en

[106] FAO. 2025. *National gender profile of agriculture and rural livelihoods – Montenegro.* Country Gender Assessment Series. Budapest. https://doi.org/10.4060/cd7254en

[107] FAO. 2025. *National gender profile of agriculture and rural livelihoods – Uzbekistan.* Country Gender Assessment Series. Budapest. https://doi.org/10.4060/cd7898en

[108] FAO. 2025. *National gender profile of agriculture and rural livelihoods: Georgia.* Country Gender Assessment Series. Budapest. https://doi.org/10.4060/cd3777en; FAO. 2025. Smallholder woman farmer flourishing with innovative cheesemaking and modern dairy production practices in Georgia. In: *FAO Regional Office for Europe and Central Asia.* https://www.fao.org/europe/resources/stories/details/smallholder-woman-farmer-flourishing-with-innovative-cheesemaking-and-modern-dairy-production-practices-in-georgia/en

[109] FAO. 2025. *The Status of Youth in Agrifood Systems*. Rome. https://doi.org/10.4060/cd5886en

skeletal growth; malnutrition or toxic stress during this time can result in permanent cognitive impairments and reduced lifetime productivity.[110]

29. In recent years, Kazakhstan[111] and Uzbekistan[112] have operated resilience-building projects aimed at empowering youth. In Türkiye, the Provincial Directorate of Agriculture and Forestry, with the assistance of FAO, implemented a training programme for young beekeepers and supported rural women and youth in maintaining decent rural livelihoods through enhanced access to income-diversification opportunities. Beekeeping is framed as a resilient pathway because it requires minimal land and investment.[113] In Georgia, FAO assisted in the development of a youth network for agriculture and rural development. Contributing to building resilience as "generational renewal" is a fundamental precondition for keeping agriculture viable.[114]

IV. Conclusions and recommendations

30. The analysis presented in this paper highlights several structural gaps and emerging priorities for strengthening agrifood systems resilience in the ECA region that form the basis for the following conclusions:

- Multiple, simultaneous risks increasingly affect agrifood systems in the ECA region. Evidence shows that compounding hazards – climate, economic, biological, social and market-related – amplify overall impacts beyond the sum of individual shocks. This requires a shift from single-hazard approaches towards integrated, multi-risk resilience frameworks.
- Existing monitoring and early warning systems remain fragmented. Many systems focus on individual risks, are sector specific or lack interinstitutional coordination, making it difficult for countries to anticipate cascading effects or plan at the systemic level.
- Vulnerable groups are insufficiently reflected in current assessments. Women, youth, smallholders, migrants, the elderly and persons with disabilities face structural barriers in access to resources and decision-making yet are rarely addressed in risk diagnostics and resilience interventions.
- Localised and recurrent risks require context-specific solutions. Most ECA countries experience recurring, geographically concentrated risks. Tailored, nationally adapted

[110] FAO. 2025. *The Status of Youth in Agrifood Systems*. Rome. https://doi.org/10.4060/cd5886en
[111] United Nations Kazakhstan. 2024. Shaping tomorrow: UN event in Astana spotlights key initiatives for the Summit of the Future. In: *United Nations*. https://kazakhstan.un.org/en/278294-shaping-tomorrow-un-event-astana-spotlights-key-initiatives-summit-future
[112] UNDP Uzbekistan. 2026. [Completed] Empowering youth towards a brighter future through green and innovative development of the Aral Sea region. In: *Projects.* https://www.undp.org/uzbekistan/projects/completed-empowering-youth-towards-brighter-future-through-green-and-innovative-development-aral-sea-region
[113] FAO. 2025. Buzz-worthy opportunities: Young beekeepers in Türkiye are turning hives into jobs and futures. In: *Food and Agriculture Organization of the United Nations*. https://www.fao.org/newsroom/story/Buzz-worthy-opportunities/en
[114] International Aid Transparency Initiative (IATI). 2026. *Overview of IATI Activity. Support youth inclusion and empowerment in agrifood systems for rural development.* https://datastore.iatistandard.org/activity/XM-DAC-41301-743424

methodologies – not generic global models – are required for effective planning and investment.

31. Building on these conclusions, the following recommendations outline the priority actions needed to strengthen agrifood systems resilience across the region:

A. Strengthen multi-risk monitoring and early warning.

- Develop integrated multi-risk monitoring methodologies adapted to ECA-specific risk profiles.
- Improve coordination across thematic early warning systems (climate, animal health, markets, water and forestry).
- Link monitoring efforts to National Adaptation Plans, nationally determined contributions, Enhanced Transparency Framework reporting and national disaster risk reduction frameworks.

B. Integrate equity and vulnerability considerations.

- Ensure that assessments and resilience plans explicitly include women, youth, smallholders, minorities, elderly people, persons with disabilities and migrants.
- Embed gender-responsive and youth-inclusive approaches in national policies, extension systems and recovery programmes.

C. Invest in data systems and analytical capacities.

- Strengthen country capacities to collect, integrate and use disaggregated data (location, gender, age).
- Promote the use of digital tools, geospatial systems and climate risk analytics in planning and policymaking.

D. Embed multi-risk governance into national and sectoral policies.

- Ensure that multi-risk considerations are mainstreamed across agriculture, water, forestry, fisheries and food security policies.
- Address institutional fragmentation through clearer mandates and interministerial coordination.

E. Enhance regional cooperation and the sharing of knowledge.

- Strengthen regional platforms (e.g. animal health networks, locust systems, forest health, water–land nexus).
- Promote joint preparedness, harmonised methodologies and shared risk information among neighbouring countries.

F. Use agrifood systems as an entry point for resilience.

- Position agrifood systems as central to national resilience-building efforts, ensuring inclusive investment support and sustainable development.