



EU4Climate

Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova, Ukraine

Climate risk and vulnerability assessment – experience of Ukraine

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Regional workshop on national adaptation strategies and
plans in section “Turning Plans into Action” - Ukraine

Climate change vulnerable sectors in Ukraine



According to the Strategy for Environmental Security and Climate Change Adaptation in Ukraine for the period up to 2030:

- biodiversity
- water resources
- energy
- public health
- forestry
- coastal zones
- fishery
- agriculture and soils
- communities
- transport and infrastructure
- tourism

Implementation of climate risk and vulnerability assessment in Ukraine



Strategy for Environmental Security and Climate Change Adaptation in Ukraine for the period up to 2030:

2022

- Development of methodology on climate risk vulnerability assessment (CRVA) for key economic sectors
- Development of methodological recommendations for the inclusion of climate change adaptation issues in the programmes of economic and social development of regions
- Development of methodological recommendations for considering the climate component in state planning documents, under strategic environmental assessment (SEA) and environmental impact assessment (EIA)

2022 – 2024

- Implementation of CRVA for public health, agriculture, forests and forestry, biodiversity, water resources, transport and infrastructure, energetic sector, fishery, coastal areas, settlements and communities, tourism

2023 – 2024

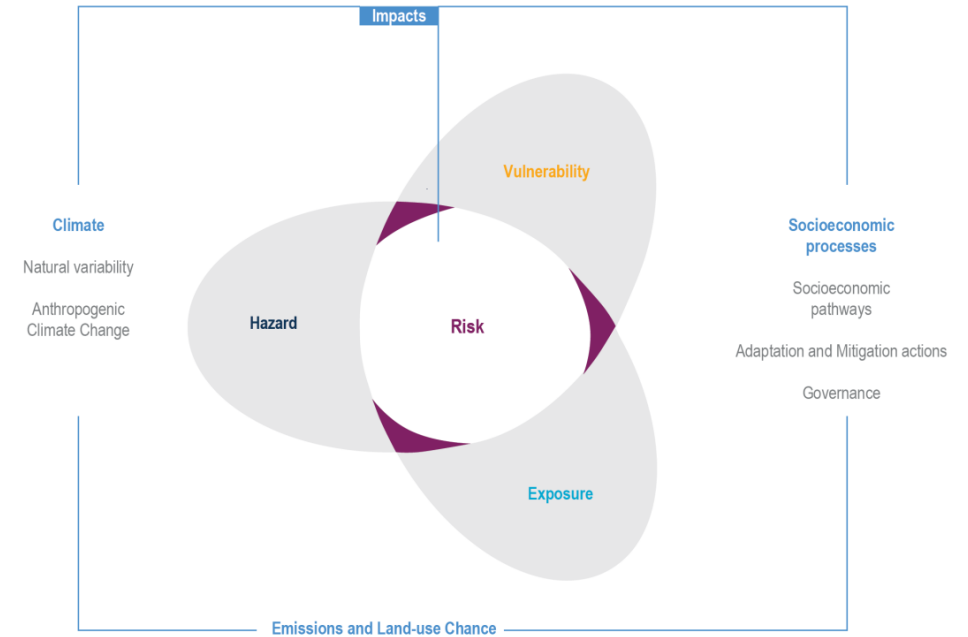
- Development of action plans on climate change adaptation for public health, agriculture and fishery

Climate risk and vulnerability framework

- ❖ IPCC WGII Fifth Assessment Report: Climate Change 2014 – Impacts, Adaptation and Vulnerability
- ❖ IPCC WGII Sixth Assessment Report: Climate Change 2022 – Impacts, Adaptation and Vulnerability
- ❖ ISO 14091:2021 - Adaptation to climate change — Guidelines on vulnerability, impacts and risk assessment
- ❖ FAO key principles for designing and conducting assessments of risk and vulnerability of agricultural systems to different climate change scenarios, 2015
- ❖ The Vulnerability Sourcebook – Concept and guidelines for standardised vulnerability assessments. GIZ, 2014
- ❖ Risk Supplement to the Vulnerability Sourcebook – Guidance on how to apply the Vulnerability Sourcebook's approach with the new IPCC AR5 concept of climate risk. GIZ, 2017
- ❖ Publications in peer-reviewed journals

Figure 1.5: Risk in IPCC assessment through time

a) The AR5 risk graphic



b) AR6 additions: response risk and complexity



Climate risk and vulnerability indicators in biodiversity sector



Risk component	Indicators
Hazards	Extreme temperatures, change in growing season dates and duration, climate continentality degree, change in precipitation amount and seasonality, droughts duration and frequency, snow cover duration, extreme weather events frequency and intensity, rate of sea level rise
Sensitivity	Degree of habitat specialization, degree of dietary (animals) and pollinator (plants) specialization, phenological dependence upon seasonal climate triggers, dependence on interspecific interactions, the rarity of species, high exposure to anthropogenic impacts and pressure, habitat fragmentation degree
Exposure	Species composition and abundance, the share of rare and endangered species, presence of migration corridors
Adaptive capacity	Species: phenotypic plasticity, dispersal ability, evolvability, Habitats: diversity within characteristic functional species groups, vulnerability of keystone species to climate change, topographic variability (terrain ruggedness)

Biodiversity areas in Ukraine vulnerable to climate change



Lands of various types and status

- protected areas (Nature Reserve Fund of Ukraine)
- Ramsar sites
- Emerald network
- fragmented natural landscape sites without specific conservation status (forests, grasslands, wetlands, water bodies)
- forest belts
- parks

Ecosystems

- ecosystems and biodiversity of river valleys, riverbank protection strips with a sharp change in the hydraulic regime
- ecosystems and species located on the edge of the range or in extreme climatic conditions, especially mountain ecosystems of the Carpathians
- forest ecosystems that lose their stability due to changes in the hydrologic regime and are damaged due to the spread of pests and diseases, storms, etc.
- nature protection areas due to the inability to ensure the conservation of flora and fauna species and types of natural habitats for which such sites were created
- salty and freshwater estuaries and wetlands in the southern regions of Ukraine