



CLIMATE RESILIENT LANDSCAPES AND RELATED EU STRATEGIC INITIATIVES

Practical implementation of water and soil management; requirements for CAP measures

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Workshop in Pardubice, 30/09/2024

I. The path towards climate resilient landscapes and related EU strategic initiatives



Source: Brochure on Designing Climate Resilient Landscapes

Climate Resilient Landscapes conference

- Prague, September 2022, Czech EU Presidency
- **Spatial planning and land management** focused on ecosystem services protection and restoration
- Simultaneous implementation of measures on **soil health, water retention** on the whole surface, and **forest resilience**
- [Prague Appeal](#) - endorsed by Environment ministers at Environment Council in October 2022
- Brochure on best practices



[Link to the brochure](#)

European Climate Risk Assessment (EUCRA) report

A scientific EEA report, published 11/03/2024, with a strong focus on cascading and compounding risks. The new go-to reference point for climate risks in Europe.

Key takeaways

- **Climate risk drivers are accelerating:** worse heatwaves, more downpours, floods and droughts, higher sea temperatures.
- **Several risks are already critical level**, almost all would become critical or catastrophic during the century.
- **EU policy preparedness is lagging behind the speed of change in the climate risks.**



EUCRA identifies 36 key risks for Europe, grouped in five clusters.

<https://www.eea.europa.eu/publications/european-climate-risk-assessment>













EUCRA – main agriculture-related findings

- **Heatwaves and prolonged droughts** growing
- A growing risk of **megadroughts** that span **large regions** and last for **several years**
- The risk of extreme precipitation leading to **floods** growing
- Risks to **crop production** already at a **critical level**
- **EU policy** preparedness is **lagging behind** the speed of change in the climate risks.








Crops fail during a drought (Getty Images/iStockphoto)

EUCRA – main climate risks in the food cluster





Climate risks for 'Food' cluster	Urgency to act	Risk severity		
		Current	Mid-century	Late century (low/high warming scenario)
Crop production (hotspot region: southern Europe)		+++	++	++ 
Crop production		+++	++	++ 
Food security due to climate impacts outside Europe (*)		++	++	+ 
Food security due to higher food prices		++	+	+ 
Fisheries and aquaculture		++	+	+ 
Livestock production		++	++	+ 

Legends and notes

Urgency to act

-  Urgent action needed
-  More action needed
-  Further investigation
-  Sustain current action
-  Watching brief

Risk severity

-  Catastrophic
-  Critical
-  Substantial
-  Limited

Confidence

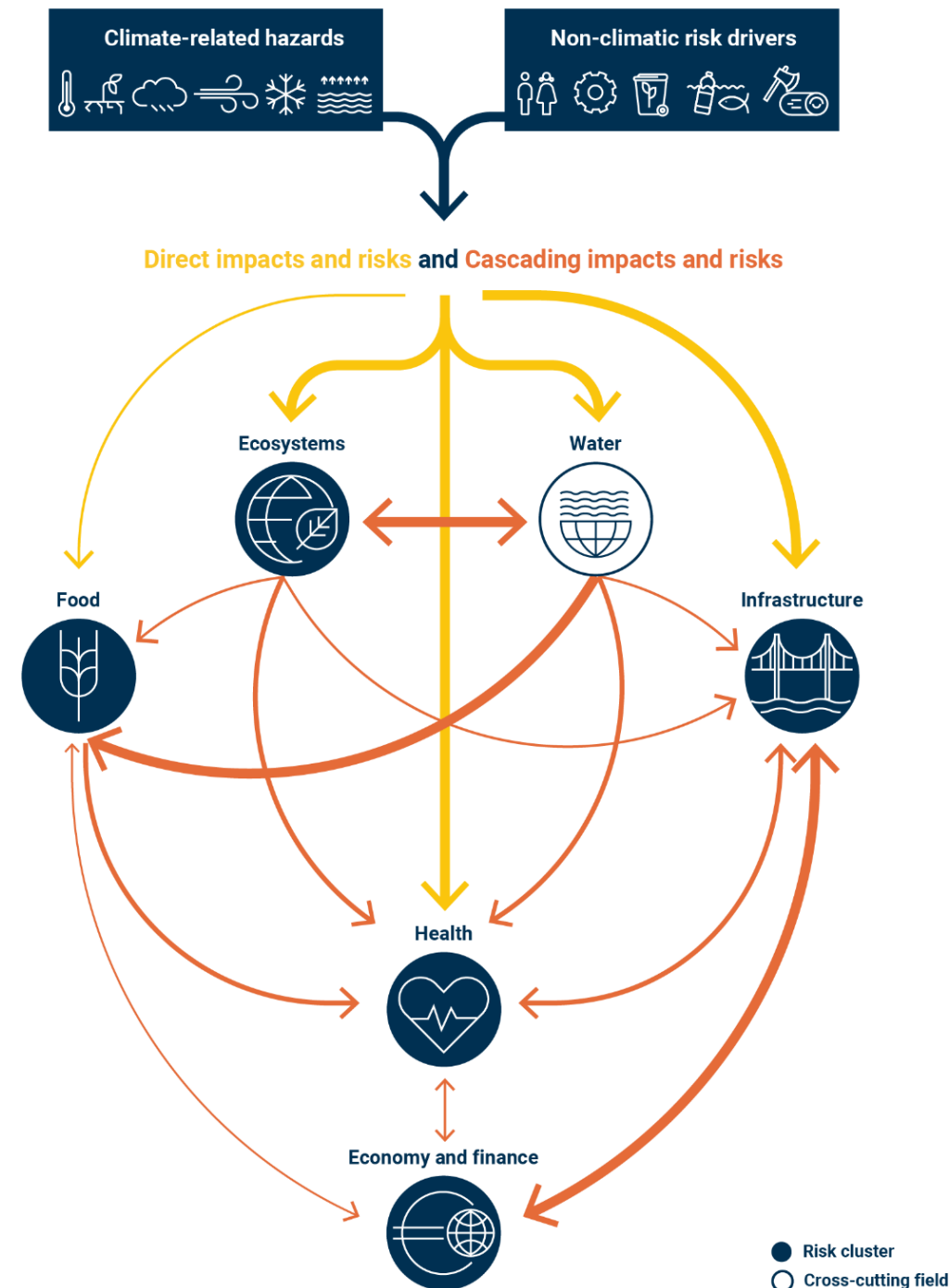
- Low: +
- Medium: ++
- High: +++

(*) Wide range of evaluations by authors and risk reviewers.

(**) Urgency based on high warming scenario (late century).

EUCRA – risk cascading

- Climate impacts on food production can **cascade** to rural and coastal livelihoods, land use, the health of socially vulnerable populations, and the wider economy
- For example, climate change driven **mega-droughts** can lead to water and food insecurity, spread of diseases, disruptions of critical infrastructure, and threats to financial markets and stability



Risks FOR agriculture and risks OF agriculture



Source: author

Communication “Managing climate risks – protecting people and prosperity”

Main parameters of the Communication:

- Demonstrates EU readiness to respond to the evolving reality
- Geographic focus within the EU
- **Risk ownership** a central concept - identifying responsibility for managing risks, notably between EU and MS level
- Calibrated to the end of mandate, mostly about good decision-making processes and tools.
- [Link](#)

1. **Introduction:** explains why urgent action is needed and how it builds on existing processes

2. **Analysis/climate science:** Provides a condensed selection of the evidence and the uncertainties.

3. **Solutions space (provides key horizontal actions)**

3.1. Improved governance

3.2. Tools for empowering risk owners

3.3. Harnessing structural policies

3.4. Right preconditions for financing climate resilience

4. **Key actions in in main impact clusters**

4.1. Natural ecosystems

4.2. Water

4.3. Health

4.4. Food

4.5. Infrastructure

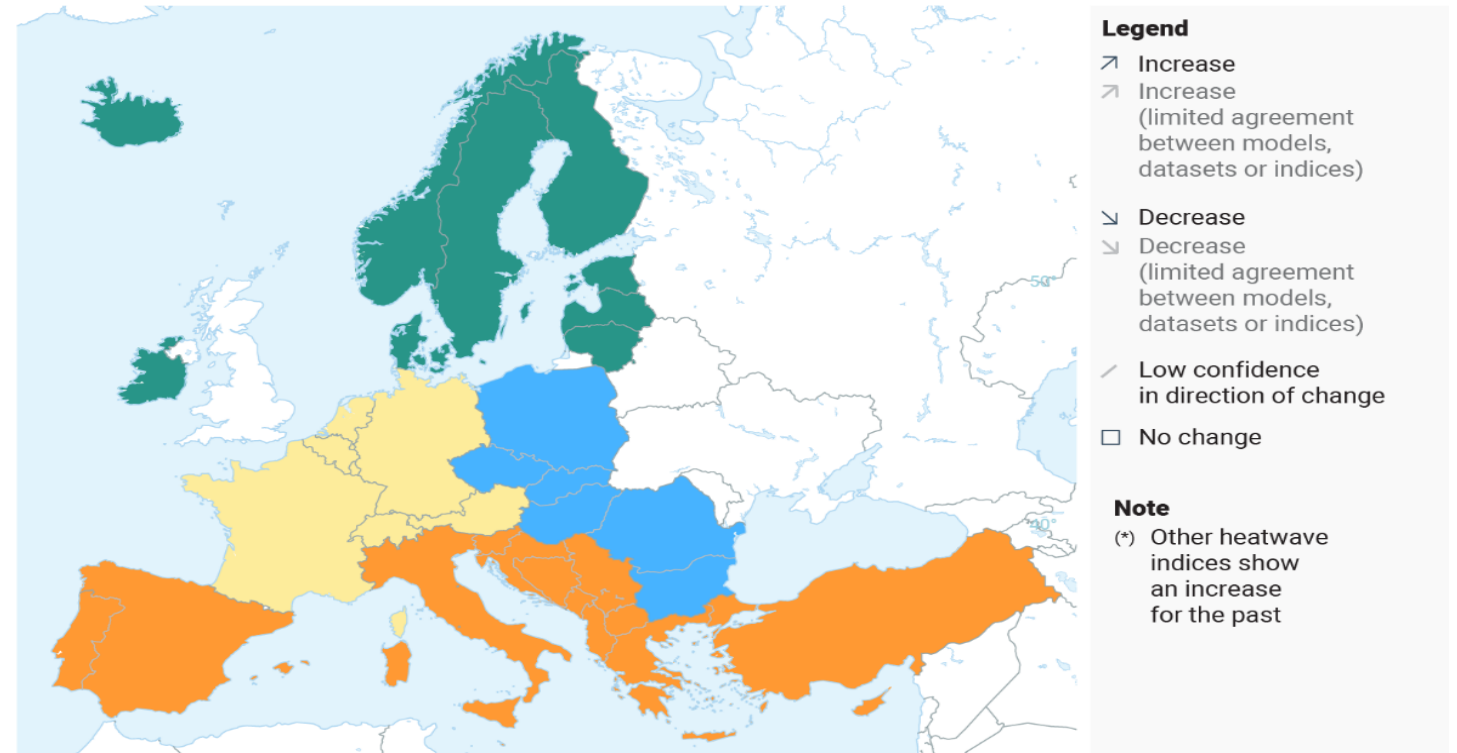
4.6. Economy

5. **Next steps**

Diagnostics

- Most key **climate hazards** are **increasing** all over Europe
- All hazards increasing in **Southern Europe**
- Risks further increase for **the most vulnerable people**

Land regions	Northern Europe			Western Europe			Central-Eastern Europe			Southern Europe			European regional seas		
	Past	Future		Past	Future		Past	Future		Past	Future			Past	Future
		Low	High		Low	High		Low	High		Low	High			
Mean temperature	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	Sea surface temperature	↗	↗
Heat wave days	☐(*)	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			
Total precipitation	↗	↗	↗	↗	↘	↘	↗	↗	↘	↘	↘	↘	Sea level	↗	↗
Heavy precipitation	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			
Drought	↗	↘	↘	↗	↘	↗	↗	↘	↗	↗	↗	↗			



Food cluster: examples of key risks to be addressed (agriculture)

- **Floods, heatwaves, droughts, pest and disease pressures, biodiversity loss, soil degradation**
- **Shift in agroclimatic zones → changes in crop selection, more crop failures, heat for outdoor work**
- **Disruptions in value chains**
- **Crop failure outside the EU → increased prices in the EU → problems in food security and affordability**

Food cluster: examples of actions (agriculture)

Support for the transition to resilient farming

- Wider use of risk management tools
- Reinforcing soil monitoring
- Giving value to the protection of ecosystem services
- Diversifying food production
- Better use of genetic diversity and non-harmful plant genetic resources

Study on climate change adaptation and water use in EU agriculture



Source: On the farm radio

Guidance on climate resilient landscapes: 4.1.

- The core elements of a climate-resilient landscape need to be addressed simultaneously to preserve landscapes' capacity to reduce the risk of drought, floods, storm surges, wildfires or erosion along with delivering other ecosystem services.
- Rural areas cover most of Europe's land and a siloed approach to managing soil, water and forests in the same area has reached its limits. A comprehensive and integrated approach is needed to ensure that ecosystems over large areas can cope with the multiple threats.
- To support the best use of existing planning documents and in synergy with the Member States' spatial planning and nature restoration plans, the Commission, working with the Member States, will draw up guidance on the development of resilient landscapes that can buffer the impacts of climate change.

Ursula von der Leyen: Political guidelines 2024-2029

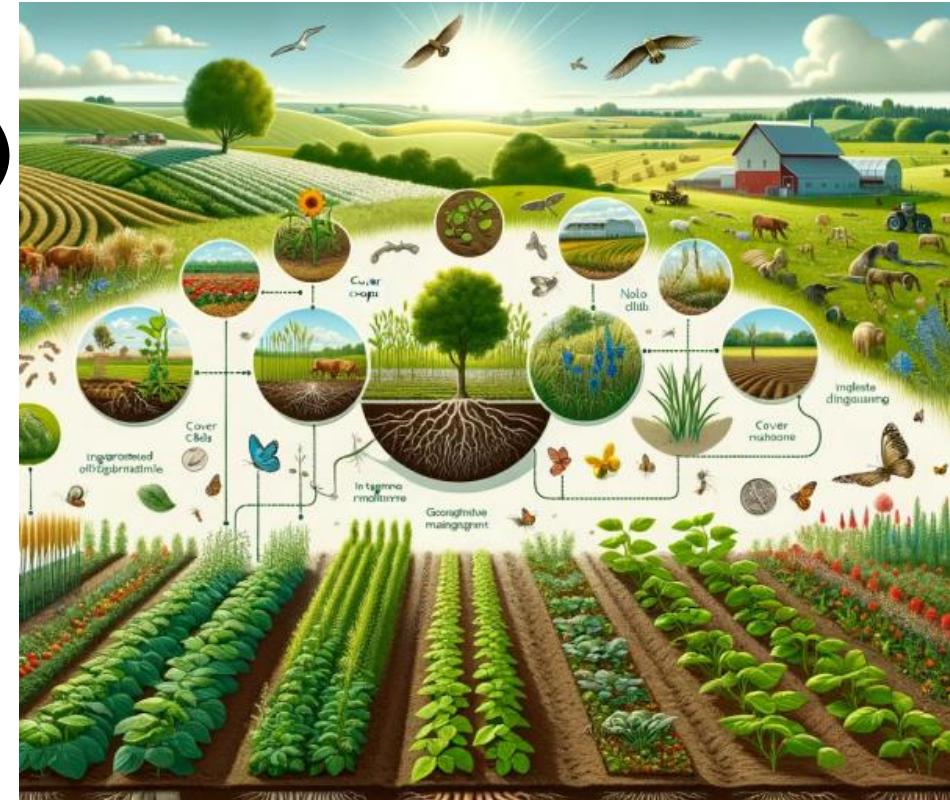
„We must also continue the protection of our natural world. Our forests and woodlands, our wetlands and our grasslands are not only our home and **landscapes** of Europeans, but are also **essential to regulating our climate** and ensuring food and water security.“



Source: *Brochure on Designing Climate Resilient Landscapes*

Strategic Dialogue on the Future of EU Agriculture

- On-farm sustainability assessments
- Targeted support (ecosystem services)
- More funds to environment / climate
- Support sustainable farming practices
- Reduction of GHG emissions
- Support for transition
- Risk and crisis management
- Support to biodiversity protection
- Support to organic farming



Source: World Permaculture Association

Other EU soil-related strategic initiatives

- **EU Climate Adaptation Plan**
- **Soil monitoring law**
- **Forest monitoring law**
- **Water Resilience Strategy**
- **Nature restoration law**



Source: Brochure on Designing Climate Resilient Landscapes

II. Climate resilient landscapes – essential elements



Source: Brochure on Designing Climate Resilient Landscapes

Climate Resilient Landscapes: definitions

- 'Landscapes' = all natural and human-made features of an area of land
- 'Climate resilience' = the ability to anticipate, prepare for, and respond to climate-change related hazardous events, trends, or disturbances

CLIMATE-RESILIENT AGRICULTURE

RESTORE THE NATURAL SYSTEM

Reduce drainage
Precision irrigation

Water storage
Increase organic
content

Climate
resilient crops

Reforestation
Fill in ditches
Marshy stream /
floodplains
River valley restoration
Remeandering

CLIMATE-ADAPTIVE CITY

Replace impermeable
surfaces
Disconnect rainwater
drainage

Water storage in streets
and public spaces
Green roofs

Buffer zones

Restoration of groundwater flows
Sustainable soil management

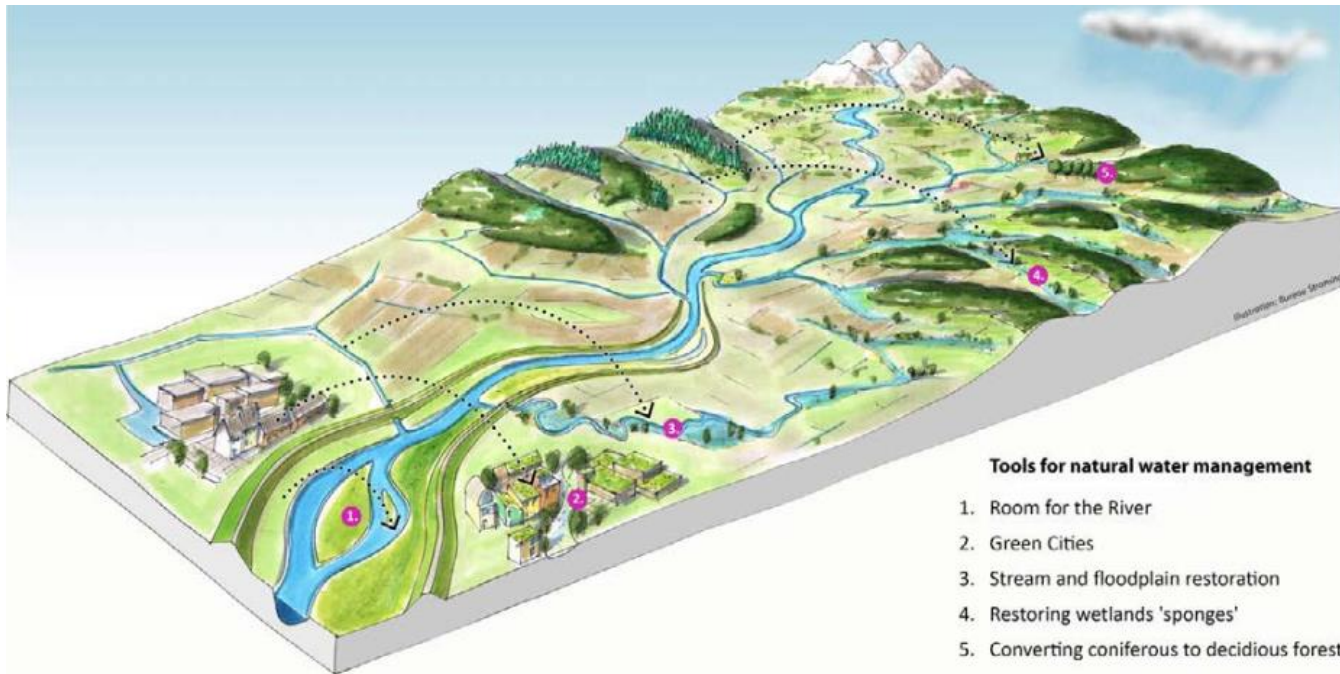
biological crop protection

helophyte filters

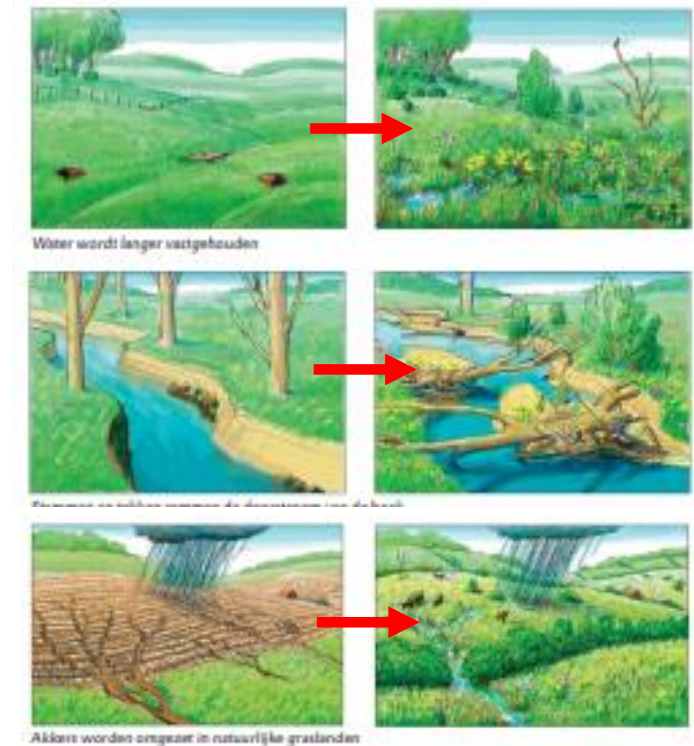
near-natural stream cross-section

WATER QUALITY
IMPROVEMENT

Restoration of the sponge function of the landscape



- Climate adaptation: restoration of the resilience of a large area to deal with the increasing risks of extreme droughts, flooding, and heat waves.
- Climate mitigation: enhancing carbon sequestration (wetlands, forests, grasslands)



Guidance on Climate Resilient Landscapes - goals

- General objective: **To contribute to climate change adaptation of EU (rural) areas through enhancing landscapes' resilience**
- Specific objectives: to develop **a practical, inspirational and user-friendly** Guidance, comprising a **methodology** for all relevant stakeholders who intend to make their rural landscapes climate resilient, especially through **nature-based solutions and ecosystem-based adaptation**.
- This shall be achieved by developing and putting in practice a comprehensive and integrated approach, based on a simultaneous implementation of measures for improved **soil health, water retention and forest resilience**, embedded in a robust **spatial planning process**.
- A **participatory approach** shall be a part of this methodology.

Guidance on Climate Resilient Landscapes - content

- Why is climate resilience of (rural) landscapes important (for decision makers)
- Current risks and benefits of resilient landscapes for different stakeholders
- How to determine climate resilience of a landscape (before / after)
- Measuring resilience – indicators, measurement methods, baseline, data, etc.
- How to enhance landscapes' climate resilience – a step-by-step guide, including a 'menu of options'
- How to engage relevant stakeholders (a unique participatory methodology)
- How the approach may be applied to relevant EU policies and financial instruments / national level / third countries
- Examples of existing best practices

III. Management of the project

- **Overall coordination and responsibility:** DG CLIMA
- **Inter-service steering group** (Other DGs + European Environment Agency)
- **Consultative group** (Member States representatives, scientists, project implementers, landowners, academia, NGOs, regional and local authorities, farmers, foresters, and others)
- **Framework contractors**



Source: Brochure on Designing Climate Resilient Landscapes

IV. Target group

- Local and regional authorities
- Authorities responsible for permitting, and/or for spatial planning
- Land owners and land managers
- Water managers
- Managers of nature-protected areas
- Drinking water companies
- Managers of transport or energy infrastructure
- Managers of residential and business areas

V. Rough timeline

- Launch of the project – November 2024
- Inception report – January 2025
- Regional workshops – spring 2025
- First draft of the Guidance – mid 2025
- Final workshop
- Final Guidance and its dissemination – end 2025

Thank you for your kind attention!



Source: Brochure on Designing Climate Resilient Landscapes