

# Climate Resilient Development

Foster adaptation through spatial planning in the EUSALP area

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**EUSALP** EU Strategy for the Alpine Region  
Action Group 8 – Risk Governance



## Key Policy Messages

1

### Develop adaptation pathways and improve sectoral cooperation

Planning has to be integrated in a problem driven development of adaptation measures that is based on cross-sectoral cooperation.

2

### Identify dependencies of nature-based solutions

Planning has to display and co-manage natural features that provide hazard protection and climate services, especially mountain forests.

3

### Establish an iterative learning process

Implementation experience has to be monitored and evaluated to improve and enhance climate change adaptation on the whole.



# Building climate resilience through spatial planning

## Building capacities

### Climate change requires action

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The Alps are highly exposed to climate change impacts while already experiencing a wide-ranging hazard exposure. The essential climate signals in the Alpine region are:

- seasonal shift in precipitation
- overall rise in temperature
- shifts in extreme weather events

Climate resilient spatial planning seeks to improve the coping capacity of the built environment to such disruptions.

International protocols, guidelines as well as the National and Regional Adaptation Strategies of the Alpine countries outline necessary adaptation action and assign spatial planning certain responsibilities. Planning laws specify and prioritise goals and enhance planning instruments for according adaptation action.

### Implement measures on all levels

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Adaptation measures are implemented mainly on local and regional level. Planning can especially (i) ensure that buildings and urban design can cope with increasing heat, manage surface water as well as floods and safeguard fresh air corridors on the local level; (ii) keep areas free from urban development on the regional level to ensure climate services (flood retention, cold air emergence, biodiversity, etc.)

### Legal

Planning legislation is step-by-step integrating climate change adaptation in overall objectives and capacities of instruments. Enhancement is a permanent process that has to be sensitive to needs of decision makers.

### Institutional

Institutional responsibilities need to be clearly assigned and cooperation schemes have to be developed to guarantee that planning authorities and decision makers have access to climate relevant information.

### Administrative

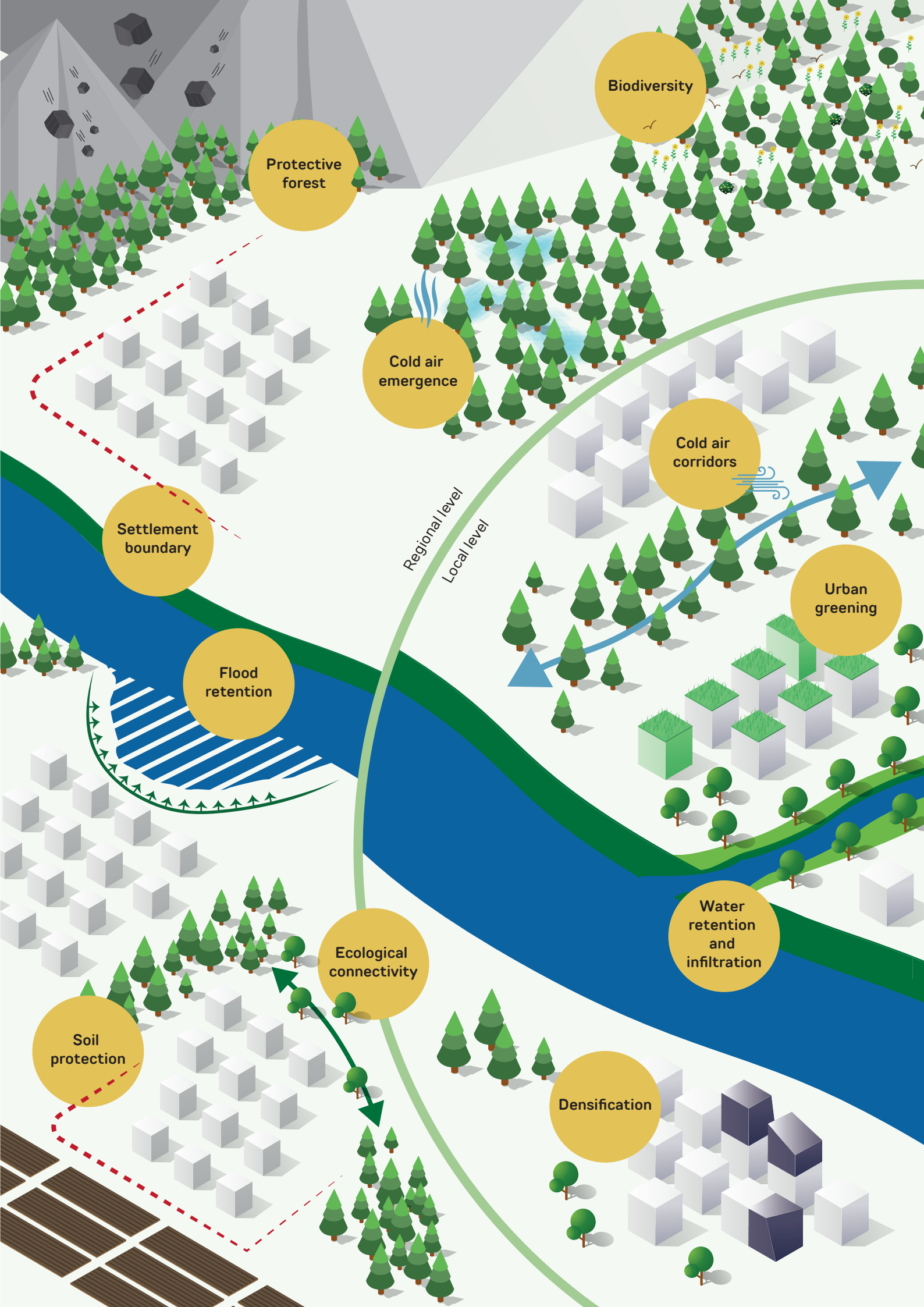
Personal resources and competences are key to effective adaptation action. Such resources need to be planned, created and safeguarded in the long-term.

### Technical

Maps and assessments that display climate change impacts, vulnerabilities and risks are widely available. Lack of information is not an obstacle anymore but public accessibility and transparency are essential.

### Financial

Adaptation action has hardly any long-term funding. Financing needs to be defined and existing subsidy schemes can be enhanced to support implementation of adaptation action on all levels.



Biodiversity

Protective forest

Cold air emergence

Cold air corridors

Urban greening

Water retention and infiltration

Ecological connectivity

Soil protection

Flood retention

Settlement boundary

Densification

Regional level

Local level

# A region that takes action

## Walgau/Vorarlberg, AT

The Walgau valley is located in the most western province of Austria, Vorarlberg, neighbouring Liechtenstein, Germany and Switzerland.

The region is exposed to the main climate signals in the Alps and experiences an increasing number of heat days and a shift in seasonal precipitation that contributes to increasing droughts as well as heavy rain and snowfall events. The situation is expected to worsen and adaptation action needs to be taken.

Therefore, thirteen municipalities established a regional cooperation to coordinate urban development and infrastructure provision. This regional association joined the KLAR! programme to integrate climate change adaptation in its work.



### **We need to take care of generations to come.**

*Marina Fischer,  
KLAR! manager*

Climate change adaptation in mountainous areas strongly depends on nature-based solutions to provide e.g. hazard protection, ecosystem services or cold air to manage heat waves. Protective forests are important natural features in the Walgau valley that are a prerequisite for any urban development.



### **A natural mixture of tree species is necessary to encounter climate change impacts.**

*Wolfgang Schilcher, Austrian  
Service for Torrent and  
Avalanche Control*

Climate change puts pressure on forests through droughts as well as increasing bark beetle infestation and additional damages occur due to high numbers of game. Natural rejuvenation and according management is essential to sustain our mountain forests.

Planning is strongly rooted on local level in all Alpine countries. Municipal councils have a substantial role in steering urban development and therefore in successful climate change adaptation.

Developing adaptation measures needs expertise, time and typically regional cooperation as solely local solutions would not be sufficient. Municipalities in Walgau valley have already started a regional cooperation years ago and are now integrating climate change adaptation in their collaborative planning efforts. Additionally, the province of Vorarlberg is supporting the municipalities with advice and information on climate change impacts.



### **The small entities contribute with their actions to the success of a bigger effort.**

*Florian Kasseroler,  
Mayor Nenzing Municipality*

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**The policy brief is based on the following study report:**  
Schindelegger A., Steinbrunner B., Ertl M. (2022): Climate-Resilient Spatial Planning in the Alps.  
EUSALP Action Group 8.



Action Group 8  
Online



Video on regional actions in  
climate change adaptation