



# National implementation of EU missions



## Action plan

# EU mission "Mastering climate change"

 Bundesministerium  
Land- und Forstwirtschaft,  
Klima- und Umweltschutz,  
Regionen und Wasserwirtschaft

 Bundesministerium  
Frauen, Wissenschaft  
und Forschung

## **PREAMBLE**

This action plan for the implementation of the EU mission "Adaptation to Climate Change" in Austria is the result of an intensive coordination process of the Mission Action Group Climate. It forms the basis for the coordinated and sustainable implementation of measures to achieve the mission objectives at national level.

This action plan provides orientation for the joint activities of the Austrian stakeholders. It defines strategic priorities and operational steps and presents concrete measures and ideas that can contribute to the successful achievement of the mission goals.

As a "living document", the action plan is deliberately designed to be adaptable. It will be continuously developed and adapted to new findings, challenges and opportunities and, in particular, to the direction of future government programmes and relevant national and European strategies. Above all, however, this plan is an open invitation to all interested stakeholders from business, science, civil society and public administration to play an active role in the further discussion, conceptualisation and implementation of the measures. Only through this broad participation and the joint commitment of all relevant stakeholders can the ambitious goals of the EU missions in Austria be realised.

# Participating institutions of the Mission Action Group Climate

We would like to thank all members of the Mission Action Group for their commitment to the "Mastering Climate Change" action plan. This action plan is the result of intensive collaboration in the belief that climate-resilient regions, cities and communities are crucial for our future.

Each member of this group has made a significant contribution with their individual expertise, passion and commitment.

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Office of the Styrian Provincial Government  
Office of the Tyrolean Provincial Government  
Austrian Exchange Service  
Austria Wirtschaftsservice  
AIT Austrian Institute of Technology  
BABEG Carinthian Business Development and Investment Company  
BMFWF  
BMLUK  
Bundesbeschaffung Austria  
Business Upper Austria  
CCCA Climate Change Centre Austria  
Climate KIC  
E.C.O. Institute for Ecology  
Environment Agency Austria  
Energy and Environment Agency of Lower Austria  
Energie Tirol - Consultancy, research, promotion  
FFG Austrian Research Promotion Agency  
UAS Burgenland  
UAS Upper Austria  
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Climate Alliance Austria  
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Klima Konkret  
KEM Climate and Energy Model Regions  
KLAR Climate Change Adaptation Model Regions  
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# LIST OF ABBREVIATIONS

ACRP - Austrian Climate Research Programme

ACRPi - Austrian Climate Research Programme Implementation

AIT - Austrian Institute of Technology

ARF - Austrian Recovery and Resilience Plan

ASDR - Austrian Strategy for Disaster Risk Reduction

AWS - Austria Wirtschaftsservice

BMFWF - Federal Ministry for Women, Science and Research

BMLUK - Federal Ministry for Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management

BOKU - University of Natural Resources and Life Sciences Vienna

CCCA - Climate Change Centre Austria

CESARE - Austrian National Loss and Incident Database

e5 - e5 Programme for energy-efficient municipalities

EIB - European Investment Bank

EC - European Commission

EU - European Union

FFG - Austrian Research Promotion Agency

FoFinAG - Research and Financing Agencies

RTI - Research, Technology, Innovation

FWF - Fund for the Promotion of Scientific Research

DG - Directorate General

GIZ - German Society for Co-operation

HEU - Horizon Europe, 9th European Framework Programme for Research and Innovation

IMPA - Impact Innovation Programme

IPCC - Intergovernmental Panel on Climate Change

IUCN - International Union for Conservation of Nature and Natural Resources

LEADER - *Liaison entre actions de développement de l'économie rurale (Liaison between actions for the development of the rural economy)*

LV - Performance agreement

KEM - Climate and Energy Model Regions

KLAR! - Climate Change Adaptation Model Regions

CCA - Climate change adaptation

KWAN - Climate Change Adaptation Network

MAG - Mission Action Group

MIP4Adapt - Mission Implementation Platform for the Adaptation to Climate Change

MMU - Mission Management Unit

NAS - National Adaptation Strategy (Austrian Strategy for Adaptation to Climate Change)

NbS - nature-based solutions

NGO - non-governmental organisation

OeAD - Austrian Exchange Service

ÖAW - Austrian Academy of Sciences

SDG - Sustainable Development Goals

UNEA - United Nations Environment Assembly

ZSI - Centre for Social Innovation



# 1 Context and embedding

The EU mission "Adaptation to Climate Change" supports more than 150 European regions and municipalities in becoming resilient to climate change by 2030. Recent years have shown that the Alpine region, and therefore Austria, is particularly hard hit by the effects of climate change. It is therefore urgently necessary to implement effective adaptation measures in order to avoid the adverse effects on society, the economy and the environment, to maintain the quality of life, to utilise the opportunities that arise and to promote the strengthening of natural, social and economic adaptive capacity.

The Mission Action Group has developed the following three impact paths on the basis of the implementation framework and many rounds of dialogue and intensive expert discussions:

## **Networking and coordination**

In Austria, there are a large number of actors, initiatives and funding programmes that are already making contributions to climate change adaptation. However, there is a lack of cross-organisational and systemic networking and coordination for the implementation of measures and activities beyond sectoral boundaries, support for the systematic identification of remaining gaps in the implementation of the action plan for the Austrian Strategy for Adaptation to Climate Change (e.g. action field city - urban open and green spaces), and a central source of information on funding opportunities, examples of success, etc.

## **Research**

In order to better understand the effects of climate change on Austria, in particular the associated risks, and to cope with extreme events intensified by climate change, we need harmonised and publicly accessible knowledge and data bases. Based on this, Austrian regions, cities and municipalities could better plan and implement local adaptation measures and thus better prepare for local climate risks.

In addition, nature-based solutions (NbS) are to be further researched, tested and implemented as comprehensively as possible, particularly in the areas of construction and housing, protection against natural hazards, agriculture and forestry as well as the protection of biodiversity and renewable raw materials.

## **Realisation**

As a cross-cutting issue, adaptation to climate change affects a large number of fields of activity and stakeholders from different areas and levels of responsibility: from public administration to the various sectors of the economy to individual areas of life. Fragmented networking between the different fields of activity, decision-making levels and the people required for implementation, as well as a lack of information, can lead to conflicts and misalignment. For this reason, cross-sectoral cooperation across traditional competence boundaries should be systematically promoted. Climate change also raises a number of social issues, which is why social cohesion<sup>1</sup> is strengthened in the course of *good adaptation* and disadvantaged groups must not be overlooked.

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<sup>1</sup> For definition see glossary [8.1](#)



Furthermore, demonstration projects with high replication potential for a climate-resilient transformation are to be established, such as the creation of ecological corridors in cooperation with protected areas. NbS play a central role here, which is why their effectiveness on biodiversity is to be analysed in parallel.

## 2 Impact pathway I: Networking and coordination

### 2.1 Problem definition

In Austria, there are a large number of initiatives, funding programmes and levels of action that are explicitly or implicitly linked to the objectives of the Climate Change Adaptation Mission and contribute to their achievement. Successful adaptation to the effects of climate change requires the integration of these bodies of knowledge across the boundaries of organisations and sectors as well as the involvement of actors from economic, scientific and civil society organisations. The lack of or uneven networking leads to a fragmentation of the implementation landscape of actors and initiatives at regional and local level that are necessary to achieve the mission objectives. A comprehensive overview of existing knowledge and competences, initiatives, projects, financing and funding mechanisms is required. This promotes coordination and the realisation of synergy effects, prevents redundancies in innovation and promotes improved solutions.

Another problem is the current lack of dialogue between the various levels of mission implementation - from the EU to national and regional levels to cities and municipalities. This also affects the link between science, business and administration. It is important to strengthen coordination for cross-sectoral and cross-organisational cooperation at the various levels of action and decision-making.

### 2.2 Goals

#### 2.2.1 Strategic e goals

- 1 Knowledge and information on effective measures for *good adaptation* are centrally available and accessible to all stakeholders, including organised civil society and individual citizens.
- 2 All climate change adaptation measures in Austria take place under the strategic umbrella of the Austrian Strategy for Adaptation to Climate Change and with special consideration of *good adaptation practice*.
- 3 Austrian cities, municipalities and regions participate in mission-specific calls for proposals in the Research Framework Programme.
- 4 Municipalities, cities and regions as well as organised civil society are involved in the research, development and implementation of climate change adaptation measures.
- 5 The transfer of knowledge on effective climate change adaptation measures to the implementers is taking place successfully.
- 6 The quality and quantity of climate change adaptation measures in Austria is increasing.



### **2.2.2 Specific goals**

- 1 There is a well-developed and effective support structure for the regions, municipalities and cities for the acquisition of funding for adaptation measures.
- 2 Federal cooperation with regard to climate change adaptation has been further expanded and its functionality strengthened.
- 3 There are intensified and jointly implemented adaptation measures and activities by the federal government, federal states, research institutions, regions, municipalities and cities.
- 4 A central competence centre for climate change adaptation will be created as a support platform for a more coordinated and thus impact-oriented implementation of Austrian adaptation policy. This centre will act as a communication and knowledge hub for interested stakeholders in Austria.
- 5 There are formats and processes that enable and promote the exchange of knowledge and experience between research and implementation or between different fields of activity.

### **2.2.3 Operational goals**

- 1 There are coordinated adaptation measures across all fields of activity of the Austrian Adaptation Strategy, involving the relevant administrative levels for implementation.
- 2 There is an annual event on climate change adaptation in Austria at which progress is reported and discussed, targets are developed and the present action plan is further developed in a coordinated manner.
- 3 A web portal for climate change adaptation has been expanded and developed as a comprehensive repository in all areas from current tenders to information material for schools ([klimawandelanpassung.at](http://klimawandelanpassung.at)).
- 4 Austrian municipalities, cities and regions are supported in participating in relevant research projects at EU level.
- 5 Mapping of existing nature-based solutions and creation of a good practice database or visualisation of existing databases



## 2.3 Measures and instruments

### 2.3.1 Competence Centre for Climate Change Adaptation

Adaptation to climate change requires targeted networking and coordination of numerous parallel measures across fields of activity and organisational boundaries. The establishment and operation of an Austrian *Climate Change Adaptation Competence Centre* (Mission Hub) takes account of these requirements. The competence centre should be set up as broadly as possible and involve the key players at national and regional level, both from science and from practice and civil society, in its work in order to intensify the implementation of adaptation measures in Austria.

This competence centre will be organisationally embedded within the Climate and Energy Fund. The competence centre will assume the following functions:

- Support in the task of mainstreaming good CCA
- Contribution to the implementation of the Austrian Strategy for Adaptation to Climate Change (NAS) and to the implementation of the EU Climate Change Adaptation Mission in Austria
- Establishment of good climate change adaptation in Austria (see NAS, criteria for good adaptation practice)
- Preparation of information for different levels (e.g. informing about project results from research and examples of good practice so that these can serve as a source of inspiration for other implementation activities)
- Promoting and strengthening adaptation activities
- Coordination with all key stakeholders
- Creating a basis of information about activities and options for action
- Better networking of stakeholders in Austria (e.g. creating discussion spaces)
- Utilisation and coordination with existing formats and structures
- Better networking of administration, research and implementation/practice
- Networking with relevant structures and projects at EU level
- Conception, further development and implementation of the annual dialogue event "Climate Change Adaptation in Austria" based on existing formats

The competence centre will build cooperatively on existing structures and expertise, such as the climate change adaptation portal ([klimawandelanpassung.at](http://klimawandelanpassung.at) – Environment Agency Austria), the Adaptation Network for Practitioners (KWAN), the CCCA Service Center ([ccca.ac.at](http://ccca.ac.at)), the CCCA's competence map, the SDG-UniNEtZ, the Alliance of Sustainable Universities, the Alliance of Sustainable Universities as well as thematic research networks or the Austrian Research Promotion Agency (FFG) and the Austria Wirtschaftsservice (aws). Planned co-operations are:

- The website [www.klimawandelanpassung.at](http://www.klimawandelanpassung.at) (cooperation BMLUK, Climate and Energy Fund, Environment Agency Austria) is a central and thematically focussed Austrian portal offering an overview of adaptation to the consequences of climate change in Austria as well as an insight into activities and measures at EU and international level. The website provides information on current topics from politics, administration, research/science, practice and events.



- The newsletter Climate Change Adaptation (cooperation BMLUK, Climate and Energy Fund, Environment Agency Austria) is closely linked to the portal klimawandelanpassung.at, refers to important political decisions on the topic, informs about current research results, news from the KLAR! regions and cities and presents good practice examples from adaptation practice.
- The competence centre is supported by the FFG in advising Austrian municipalities, cities and regions on participation in relevant European research projects, including for cascading funds.
- The Platform for Social Responsibility at the University of Vienna and the City Science Lab at the University of Klagenfurt as well as the Austrian Center for Transformation (University of Vienna, University of Graz, BOKU, University of Applied Arts Vienna) - all institutions are currently being established - will also work together with the competence centre as multipliers in the sense of the third mission.

The competence centre should begin its work in the first quarter of 2025. It will take at least 12 months to set up the centre. The BMLUK is responsible for representing the federal government as the direct client.

The competence centre will not only deal with adaptation to the consequences of climate change and focus on avoiding maladaptation, but will also exploit synergies with climate protection activities. Synergies and cooperation with other competence centres/hubs, e.g. with climate-neutral cities and pioneer cities, must also be examined in order to optimally exploit the potential for cooperation. The implementation of the Austrian Strategy for Adaptation to Climate Change by the competence centre (BMLUK 2024) is of central importance.

## 2.4 Target groups

In its role as a competence centre, the Competence Centre addresses a large number of stakeholder groups. Its services are aimed in particular at all actors in national, regional and local governance and RTI stakeholders. Citizens are involved via multipliers.

Relevant institutions and initiatives that should be networked more closely are those of the BMLUK, BMFWF, Climate and Energy Fund, Climate Change Adaptation Officers & Climate Protection Coordinators of the federal states, Climate Neutral City - Pioneer Cities, KLAR! and KEM managers, FFG, aws, Environment Agency Austria, klimaaktiv and e5, CCCA, OeAD, Klima Konkret, SDG-UniNETZ, NGOs, OeAD Centre for Citizen Science, civil society, universities<sup>2</sup> and universities of applied sciences, research institutions, companies (including insurance companies and financial market players).

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<sup>2</sup> In particular, relevant research networks and centres, such as the Research Network Environment and Climate at the University of Vienna, the Wegener Center for Climate and Global Change at the University of Graz, the Centre for Global Change and Sustainability at the University of Natural Resources and Life Sciences, and the Platform for Research on Climate, Biodiversity and Sustainability at the University of Innsbruck.



## **2.5 Results**

### **2.5.1 Outputs**

- The competence centre has been set up and has commenced operations.

### **2.5.2 Outcomes**

- Politicians, administrators, stakeholders and interested citizens can find information and contact persons for all relevant activities at federal, state, regional and local level, as well as company networks and research players, quickly and in a comprehensible form via the competence centre.
- The competence centre is provided with all information on current activities without being asked.
- Organisations and individuals interested in funding have central access to CCA funding opportunities, submission deadlines, etc.

### **2.5.3 Impacts**

- Austria's climate change adaptation activities are based on the strategic guidelines of the Austrian Strategy for Adaptation to Climate Change and the criteria of good adaptation practice are applied in all areas. (See chapter in the Austrian Strategy for Adaptation to Climate Change, BMLUK 2024).
- The networking of relevant stakeholders takes place on an ongoing basis.

## **3 Impact pathway II: Research**

### **3.1 Problem definition**

The direct effects of climate change affect the regions in Austria to different degrees and therefore also create different risks for the regions. Targeted and forward-looking adaptation measures require a differentiated and up-to-date climate risk assessment. In order to do justice to this complexity and the needs in different fields of activity, we need climate risk analyses as a basis for climate change adaptation measures, which are supported by an overview of the different data and observations.

To date, the standardised methods for Austria and the prerequisites for the optimal coupling of data and observations for climate risk analyses are not yet sufficiently in place. Relevant data must be identified and systematised across the board. Data differ according to their aggregation level, such as standardised scientific data and experience-based local observations as well as current evidence (not measurable but assessable), which are equally important for climate risk analysis. Social and local data should also be included in the risk assessment. These have so far only been modelled to a limited extent or not at all in existing climate models. The mutual connectivity between the data should be established. In addition, the inclusion of qualitative feedback and local contextual information is necessary so that the collected data can be better utilised for mapping future developments and implementing practical solutions. This will enable a more targeted and



effective implementation of adaptation measures that meet the specific needs and conditions on the ground, avoid maladaptation and identify possible limits to climate change adaptation.

Furthermore, a specific goal of the EU Climate Change Adaptation Mission is the establishment of demonstrators for systemic transformation towards climate resilience, e.g. large-scale projects for the restoration of destroyed ecosystems in the sense of the Restoration Act and ecological corridors as well as the use of nature-based solutions (NbS) as compensation areas and for the re-establishment of green and blue infrastructures. The IUCN Global Standards have been the first global definition of NbS since 2016. The development of NbS to cope with the diverse threats and cascading effects of climate change is to be addressed, on the one hand through basic research, and on the other hand through the scaling of NbS in ecological corridors in the implementation impact pathway (see [4.3.2](#)). In addition, the effectiveness of NbS on biodiversity and the significance of NbS for biodiversity in the context of climate change will be analysed.

## **3.2 Goals**

### **3.2.1 Strategic goals**

- 1 Austrian regions and municipalities can identify their climate risk and take appropriate adaptation measures.
- 2 Austrian regions and municipalities can identify their potential for utilising NbS.
- 3 The increased use of nature-based solutions in climate change adaptation will avoid maladaptation.

### **3.2.2 Specific goals**

- 1 Factors for climate risk analyses in Austria have been identified.
- 2 Methods for measuring the factors are standardised and quality-assured and tailored to Austria.
- 3 The processes and responsibilities for the collection and provision of data and the operation of climate risk analyses are established and regulated.
- 4 Framework conditions for the collection and provision of data are established (incl. socio-demographic data, etc.; policy guideline).
- 5 Data for climate risk analyses is collated and regularly updated. The methodology, form and responsibility for integrating the collected data into climate risk analyses have been established.
- 6 Development of principles and standards for NbS, which correspond to the IUCN standards, are available.
- 7 The potential of NbS at regional and local level has been identified.

### **3.2.3 Operational goals**

- 1 Climate risk analyses for various Austrian municipalities, cities and regions can be accessed centrally from 2028 at the latest. Austrian regions that have an increased climate risk as a result of climate change can thus be identified and informed. Information on targeted measures for municipalities, cities and regions is available in a comprehensible, up-to-date format and tailored to their specific situation.
- 2 Accessibility of socio-demographic data at local level is ensured.



- 3 Standardised and quality-assured climate risk factors (adaptation of ISO standards and EU taxonomy to Austria) are available.
- 4 NbS potential analyses for the regional and local level are available.
- 5 Scientific support and monitoring during the implementation of nature-based solutions lead to quality assurance.
- 6 Climate risk service offered in cooperation with the Climate Change Adaptation Competence Centre.

### 3.3 Measures and instruments

#### 3.3.1 Research and data basis for "climate risk analyses" to support the identification and monitoring of climate change adaptation measures

There is a lack of suitable, harmonised data for climate risk analyses, which serve as an essential evidence base for planning climate change adaptation measures in areas that are particularly vulnerable and affected by climate change. This poses particular challenges:

- Lack of standardisation of data for climate risk analyses,
- Lack of harmonisation of data,
- different levels of data preparation (some as local observations, some as nationally harmonised and standardised open access data),
- Quality assurance of data unclear,
- Lack of responsibilities and funding for data collection,
- Lack of awareness of the need for data and the need to archive it,
- Lack of data accessibility.

In recent years, concepts have been honed and methods developed, which are also available in a standard (ISO14091) and in various guidelines. There have also been and still are a number of ACRP projects (e.g. KlimTAX) that deal with the operationalisation of climate risk analyses. In principle, there are currently hardly any or very few climate risk analyses available in Austria compared to Germany, for example.

The development of suitable climate change adaptation measures and their evaluation and quality control require methods, criteria, evaluation bases, in particular standardised climate risk analyses that build on existing results and guidelines; in addition, communication and communication of climate risk at various levels from federal to provincial to municipal level are essential and require appropriate support and expert exchange (e.g. ASDR Natural Hazards Conference, KWAN), but also appropriate tools (e.g. climate risk maps for Austria).

Climate risk analyses require comprehensive, coordinated and harmonised data bases, which are currently available and/or have to be generated in Austria depending on the subject area. Accessibility and availability of the data must also be given or established.

##### 3.3.1.1 Method development and operationalisation

In order to measure current and future climate risk (hazard, exposure and vulnerability; including resilience capacities such as adaptation and coping), methods and standards for identifying climate risks need to be implemented and harmonised. International activities and standards, as well as (international) guidelines, play a central role here. The involvement of all disciplines involved, from both the natural and social sciences, is essential for a comprehensive understanding of climate



risks. In addition, a close link between research and practice is necessary so that the results of scientific studies can be translated into concrete measures for adapting to and managing climate risks. This requires dedicated outreach activities towards practitioners on the part of researchers as well as an increased focus on application in research.

### **Necessary implementation steps**

- Identification of possible needs and requirements at municipal, city, state and federal level for climate risk analyses and their contribution to adaptation strategies and measures
- Consolidation of an approach for analysing and assessing climate risk in Austria for the different scale levels and for relevant sectors and/or hazards
- Further development of climate risk analyses that can also integrate regional and local data of varying quality
- Building on this, establishment and operation of climate risk services (e.g. CRiSDA project) for relevant sectors and/or hazards, including the networking of relevant stakeholders
- Communication of the results using various tools (web tools, factsheets, narratives, etc.) including communication of uncertainties and uncertainties
- Further development and utilisation of artificial intelligence
- Creating synergies with European initiatives and projects (e.g. MIP4Adapt, CLIMAAX, EUCRA, Pathways2Resilience, climate risk analysis of Germany)

### **Ongoing measures**

- CRiSDA: As part of the ACRP project, requirements and building blocks for a climate risk service for Austria are being developed. The aim is to operationalise climate risk analyses and make them available to users; this can be taken up and further developed.
- CLIMAAX: The EU project is developing a climate risk assessment method that is intended to provide a framework for climate risk analyses and is based, for example, on the GIZ Sourcebook or the ISO standards.
- REGILIENCE: The EU project develops tools and scientific knowledge to support European regions in identifying and managing their climate-related risks. In particular, the project has developed a self-assessment tool to recognise risks of maladaptation.
- The BMI's National Risk Assessment for Austria provides an essential overview of the current risks and natural hazards for Austria.
- A-LEVERS: The ACRP project has identified key risks for Austria (Burning Embers diagram) and relevant levers for climate change adaptation at regional level in KLAR! regions and develops climate change adaptation pathways for three typical Austrian regions (urban, rural, semi-urban areas).
- Risk:LOCAL: In this ACRPi project, local climate risk factsheets (e.g. for KLAR! regions) are being developed, with a particular focus on identifying vulnerable groups.
- AAR2: In the second Austrian Assessment Report, the key risks from A-LEVERS were integrated and the main climate risks for Austria were identified.

### **Future measures**

- Further development of an operational climate risk service for Austria to support the planning and monitoring of climate change adaptation measures for the federal and



provincial levels, building on the implementation of the recommendations from CRISDA; operationalisation of the approach and transfer to other sectors and hazards.

- Development of derived climate risk analyses for municipalities. The ACRPi project Risk:LOCAL is currently developing climate risk factsheets for regions/municipalities that go beyond a mere consideration of the hazard. These should be linked to the climate risk service and developed further.
- Coordination and provision of climate risk factsheets for municipalities by Geosphere to support the identification of climate change adaptation measures.
- Further development and implementation of climate risk services by Geosphere to support the development of adaptation measures and strategies at federal and state level
- Accompanying research for the ongoing improvement of climate risk methods, the necessary data and concepts and new approaches.

### 3.3.1.2 Data basis

The development and implementation of practical and decision-supporting climate risk analyses requires a large number of multidisciplinary data sets. These data sets must be able to describe the components for risk assessment (hazard, exposure and vulnerability) in the highest possible quality. Many data sets are already available, others need to be collected, but in very few cases are the relevant data uniformly available for the whole of Germany.

#### Necessary implementation steps

- Increased expansion of open data policy and data availability
- Establishment of public-private partnerships for the integration of insurance data
- Ensuring the availability of climate risk indicators and hazard indicators based on state-of-the-art climate modelling data (ÖKS\*)
- Further development and research on decadal climate projections
- Provision of data as web services, including metadata documentation
- Creation of comprehensible climate risk indicator profiles and platforms
- Combination of different data sources: Communicating limitations, data processing and data analysis, data improvement (best available data)
- Integration of vulnerability data in relevant databases (CESARE) incl. accompanying research on harmful functions
- Development of the modelling data for Austria (more ensemble runs and variables) and better preparation and communication of the data (especially through appropriate and appealing visualisation of data in public spaces). Transdisciplinary research must then be intensified on the basis of such an optimised database.
- Utilisation of current and local evidence: collecting/exchanging practitioner knowledge on local changes and combining measurements with assessments by ÖGL
- Use of artificial intelligence to analyse data
- Integration of data relevant to climate change adaptation in High Value Data Sets; adaptation of the Open Data Directive to Austria

#### Ongoing measures

- Klimaszenarien.AT: Creation of the next generation of climate scenario data for Austria



- CESARE: CESARE is currently being set up as a national loss and incident database and will provide an overall loss picture for Austria. This involves integrating different databases and harmonising data sets.
- Expansion of the Austrian MicroDataCentre.
- CRISP project: Management of climate change-induced severe weather and natural disasters is to be supported in a data-driven manner to enable more effective crisis response and intervention.
- ICARIA: The project pursues an asset-level modelling approach for sustainable and cost-efficient adaptation solutions.
- GeoSphere Austria Datahub: The GeoSphere Austria Data Hub provides high quality datasets for research and public & commercial use. The GeoSphere Austria Data Hub integrates and replaces the CCCA Data Centre.

#### Future measures

- Provision of the latest data.
- Further development of the CESARE database, plus integration of forensic analyses of damage events, with provision and collection of necessary data on site.
- Translation of the results of the forensic analysis into climate risk analyses and climate change adaptation measures.
- Accompanying research on the forensic analysis of damaging events/disasters and development of the associated methods and concepts (e.g. climate risk storyline approach). This also involves translating the results of the forensic analysis for climate risk analyses and climate change adaptation measures.
- Research on the transfer of damage data and its findings into climate risk analyses (AI, vulnerability functions, etc.).

It is essential to have a process that provides the latest data in this context and thus provides the best possible basis for the further development of the Austrian strategy for adaptation to climate change and other sectoral policies and allows well-founded decisions to be made.

#### 3.3.2 Nature-based Solutions research initiative

Nature-based solutions (NbS) are defined by the European Commission as solutions inspired and supported by nature that are cost-effective while delivering environmental, social and economic benefits and contributing to resilience. NbS are used for the protection, conservation, restoration, sustainable use and management of semi-natural and modified terrestrial, freshwater, coastal and marine ecosystems. NbS are expected to bring more and more diverse nature and natural processes to cities, landscapes and water bodies through locally adapted, resource-efficient and systemic interventions. NbS must therefore benefit biodiversity and support the provision of a range of ecosystem services such as protection against erosion, drought, flooding or forest fires as well as cooling and the availability of water, food and materials. NBS take a cross-sectoral, transdisciplinary and holistic approach to address social and economic challenges and promote human well-being and resilience. The recently adopted EU Restoration Act explicitly promotes the further implementation of NBS and aims to restore degraded ecosystems and habitats to good condition by 2050. NbS are integrated into the European Green Deal through

- Integrating nature-based solutions into research and innovation, policy and practice at EU, national and global level,



- Strengthening and expanding the European research and innovation community on nature-based solutions,
- Demonstrate the potential of nature-based solutions and create an evidence base for their socio-economic cost-effectiveness and long-term sustainability,
- driving forward the development, introduction and dissemination of locally adapted nature-based solutions, including through co-design, co-management and citizen participation,
- Improve financing solutions, including access to finance, to accelerate market uptake of nature-based solutions and restoration of degraded ecosystems,
- Improving the framework conditions for nature-based solutions and restoring damaged ecosystems, including by incorporating learning for sustainability and nature-based solutions into curricula at all levels.

In the EU research framework programme Horizon Europe (2021–2027), they will be implemented via, among other things

- the Biodiversa+ partnership, in particular via the BiodivClim hub on the potential of nature-based solutions to mitigate and adapt to climate change and the call for proposals for nature-based solutions (September 2023), as well as
- NetworkNature, an EU-funded coordination and support action whose mission is to offer the synergies of EU-funded research and innovation projects on NbS; NetworkNature has developed a European roadmap until 2030 for research and innovation on nature-based solutions; it also further tests, deploys, promotes and evaluates the benefits and impacts of NbS,
- in particular under Cluster 6 "Food, Bioeconomy, Natural Resources, Agriculture and Environment" and through the EU missions, in particular the missions on climate change adaptation, climate-neutral and smart cities and the restoration of our oceans and waters; they are also important for achieving the objectives of the Healthy Soils Mission.

In Austria, the impact and effectiveness of NbS on biodiversity and the importance of NbS for biodiversity as well as the performance of different types of NbS will be analysed. The focus will be on their resilience to changing climate patterns, extreme weather events, the strengthening of local climate regulation, the prevention of landslides and erosion control, among other things.

#### *3.3.2.1 Basic research on NbS and biodiversity*

Climate change has serious consequences for biodiversity both in Austria and worldwide. The effects of climate change also influence the effectiveness of NbS and must therefore also be taken into account in the development and implementation of NbS. The importance and impact of NbS on biodiversity and its conservation, particularly in the context of climate change, will be analysed. This will take into account the fact that the effects of climate change can influence both the development and the effectiveness of NbS. Where possible, research on this should take place in ecological corridors (see [3.3.2.2](#)).

The following questions will be analysed:

- How does the use of NbS affect biodiversity under changing climatic conditions and how can or should the extensive use of NbS be harmonised with biodiversity conservation and the requirements of climate change adaptation and the objectives of the EU Restoration Act?
- How must NbS be designed so that they can contribute to improving biodiversity, are resilient to the effects of climate change and support the achievement of the objectives of the EU Restoration Act?



## Future measures

Corresponding research projects can be funded primarily within the framework of the FWF funding programmes, via the ÖAW Earth System Sciences programme and via institutional and cross-institutional research priorities.

### 3.3.2.2 Pilot projects for research into ecological corridors

Ecological corridors are green infrastructures that connect habitats with each other and thus preserve and promote biodiversity and mitigate the consequences of climate change. For example, isolated green spaces in urban/semi-urban areas or existing nature reserves can be linked together. The designated habitat corridors of different categories (local, regional, supra-regional) amount to over 21,000 km in length throughout Austria (of which approx. 16,500 km are in forests and 4,500 km in open land) and represent remaining low-barrier, largely undeveloped and unsealed landscape areas, which are to be preserved in this way in. For the establishment of ecological corridors in Austria, existing cooperation between research institutions and protected areas (national parks, wilderness areas) should be utilised, such as the cooperation between the University of Graz and the Gesäuse National Park. It is also important to strengthen co-operation between research institutions and protected areas in the natural and cultural landscape (biosphere reserves, nature parks, Natura 2000 areas, etc.), where human-nature-economy interaction is at the forefront and where adaptation to climate change is of enormous social importance. The development of NbS is to be scientifically monitored and the following questions investigated within the framework of existing and new co-operations:

- Which basic ecosystem functions need to be strengthened in protected areas, but also in the cultural landscape, in order to mitigate the local effects of climate change? What degree of ecosystem connectivity is helpful and necessary for this? How can this connectivity be recorded and effectively communicated in cooperation between science and local experts in the regions? How can an understanding of NbS – in combination with technical solutions – be created and strengthened?
- How can the monitoring of these ecosystem functions and services be combined with adaptive management?
- What is the current status of the functional connectivity of ecological corridors? How can this be maintained and expanded?
- How can the established ecological corridors be legally safeguarded in terms of spatial planning?

## Ongoing measures

- DeKLARed ADAPTRegions: As part of the Interreg project, a strategy paper on the implementation of nature-based adaptation measures in protected areas is being developed.
- Biodiversity in the Alpine Carpathian Corridor: The project with the Danube Floodplain National Park aims to further increase the continuity of the landscape, strengthen existing natural refuges and restore degraded habitats outside protected areas.
- WeNatureEnns: The aim of the LIFE project is to create a 20 km long near-natural river floodplain system along the Enns between the mouths of the Sölk and Stainach rivers.



- **NATURE-DEMO:** In this Horizon Europe project, NbS for the protection of critical infrastructures and their climate resilience are identified, validated and mainstreamed.
- **NaturaConnect:** The Horizon Europe project aims to support countries in designing and developing a concept for a truly coherent Trans-European Nature Network (TEN-N) of protected areas.
- Biodiversity Fund: ongoing calls for proposals.

### Future measures

In order to initiate further collaborations and establish ecological corridors, the BMFWF and BMLUK, in consultation with relevant stakeholders from research institutions and protected areas, will organise a matchmaking event at which the benefits and initial results of existing collaborations will also be communicated. New collaborations and the establishment of new corridors will initially be operated on a project basis and funded via performance and funding agreements, global budgets of the institutions, the Green Finance Alliance, the Biodiversity Fund and the LIFE programme, among others.

#### 3.3.2.3 *Transdisciplinary research for locally adapted NbS*

When planning and implementing NbS measures, socio-economic and cultural factors should be taken into account and local knowledge integrated; this is why the involvement of existing structures (KLAR!, KEM, nature parks, etc.) and other local stakeholders is essential; it helps to create social acceptance and prevent conflicts.

The aim is to create a transdisciplinary basis for co-design, co-management and stakeholder and citizen participation in the development, introduction and dissemination of locally adapted NbS. The development should be guided by the following questions:

- How can NbS effectively tackle social challenges in our regions such as security of supply (drinking water, food, materials, housing) and health (climate regulation) and help to establish or maintain the necessary infrastructure?
- What instruments, tools and techniques are available for the implementation of NbS and the restoration of ecosystems?
- How can the direct and indirect benefits and costs of NbS as well as aspects of public welfare for all be recorded and documented?
- How are inclusive, transparent, enabling and empowering processes facilitated in NbS projects? How do you work with different target groups? Which formats can open up existing structures and support decision-making processes?
- How can conflicting goals and trade-offs in the care and management of land and natural resources be communicated transparently and inclusively and resolved respectfully?
- How can social communities in the regions organise adaptive habitat management? How can an understanding of NbS interventions such as "classic" infrastructure maintenance be established and combined with monitoring tasks? What structures (such as regular inspections) can support joint learning, observation and action?
- How can the involvement of existing local institutions and structures in the implementation of NbS be ensured and promoted?
- How can NbS efforts be integrated into measures across sectors and utilised as a general solution approach – working with natural processes and structures – as a matter of course?



- How can cultural-natural competence be supported in primary and secondary educational institutions such as kindergartens, schools, libraries and adult education centres?
- How can NbS support the achievement of the objectives of other EU directives (incl. EU Restoration Law, circular economy)?

#### Ongoing measures

- IIASA research group is working intensively in this area.
- PHUSICOS: The Horizon 2020 project aims to demonstrate the possibilities and limitations of nature-based solutions to reduce the risk of extreme weather events in rural mountain landscapes. Both the robustness and sustainability as well as the cost-effectiveness of the measures are taken into account.
- eNaBIS: In this Horizon Europe project, concepts are being developed for anchoring NbS in university and vocational school education at universities and vocational schools. In the Living Lab at BOKU, inter- and transdisciplinary approaches for sustainable landscape development are being developed and NbS content is being integrated into the curricula.
- NBS Academy: The Erasmus+ partnership aims to create an international community of practice for NBS training for both teachers and teacher training providers.

#### Future measures

Accompanying research is to be established for the implementation of NbS as part of the socio-ecological transformation. The relevant research programme priorities will be evaluated and potential funding measures identified. In addition, the piloting of suitable participation processes or formats will be promoted.

### 3.4 Target groups

Research institutions, individual researchers and research networks, protected areas, local administration, NGOs, citizens

### 3.5 Results

#### 3.5.1 Outputs

- Climate risk analysis methods that incorporate regional and local data into aggregated analyses.
- (Localised) climate risk analyses for cities, regions and municipalities on request.
- Data that is relevant for climate risk analyses and climate change adaptation measures is available as open data.
- Contributions to the further development of standards and quality assurance guidelines for NbS.
- A guideline for quality-assured climate risk analyses that reflect differences at regional and municipal level.
- A central database ([klimawandelanpassungsportal.at](https://www.klimawandelanpassungsportal.at), which serves as a contact point for information for countries, regions, municipalities and interested stakeholders (both with



regard to climate risk analyses and climate change adaptation measures as well as NbS) and links to other repositories that offer more specific information and more complex data.

### **3.5.2 Outcomes**

- Expanding the informative value of risk analyses and NbS potentials.
- Regional disparities in risks for climate change-induced hazards can be visualised better and more efficiently from 2028. This will provide regions and municipalities with a basis for targeted measures to overcome challenges and hazards.
- Improved accessibility of data and information on climate risk analyses and measures.
- Municipalities and regions, as well as local and regional actors and institutions, are involved in the collection of data and preparation of information and know where to find and actively use it.
- Differences in the required complexity of data and information are taken into account through intelligent networking and linking of databases and repositories.
- NbS are examples of good adaptation practice.

### **3.5.3 Impacts**

- Evidence-based preparation for the consequences of climate change will be possible and implemented across the board and on a region-specific basis.
- Conservation of biodiversity.
- Increase in public services.
- The visibility of and acceptance for climate change adaptation measures has increased.

## **4 Impact pathway III: Implementation**

### **4.1 Problem definition**

In order for the regions in Austria to be able to assess the effects of climate change and the associated hazards in a timely and efficient manner and thus prepare themselves and cope with and recover from extreme events, it is first necessary to raise awareness at local and regional level – both among decision-makers and the population. To this end, needs-based information on climate risks and the resulting hazards must be made available.

The implementation of climate change adaptation measures must primarily take place at regional and local level, as this is where both the specific vulnerabilities and the competences of the relevant stakeholders are available to take targeted and effective measures. The Climate Change Adaptation Model Regions (KLAR!) and Climate and Energy Model Regions (KEM) programmes are decisive for the design of regional adaptation and climate protection initiatives. In order to realise mission-oriented goals, appropriate structures must be established and a portfolio of measures must be anchored in the regions and integrated into the social fabric. However, the resources for such an approach are often



limited in the municipalities and local authorities. This is where the KLAR! and KEM programmes need to be expanded and capacity built at regional and local level.

It is essential that the focus is on non-technical solutions – social, ecological, organisational, institutional solutions including NbS – in addition to purely technical solutions. Social aspects should be taken into account so that existing social problems are not exacerbated. So-called "model projects: Climate-resilient transformation in regions" will be established in 2025 and corresponding solutions can be trialled. In order for other regions to benefit, both rapid methods for providing the knowledge and experience gained and effective transfer mechanisms must be developed. A comprehensive overview is necessary to avoid duplication.

In addition, existing cooperation between research institutions and regional development initiatives should be continued in line with the mission with the aim of (further) developing and applying nature-based solutions. In this way, positive effects can be achieved not only in the area of climate change adaptation, but also for other missions such as Cities, Soil and Waters. Examples include the restoration and restructuring of water bodies and wetlands, natural flood protection, including the expansion of retention areas, the development of resilient forests and the promotion of nature-based solutions to combat urban heat with the help of fresh air corridors, green and blue infrastructure and intensive green roofs.

## **4.2 Goals**

### **4.2.1 Strategic goals**

- 1 The Austrian regions and municipalities are aware of the consequences of climate change and have taken appropriate adaptation measures.
- 2 By 2040, there will be a comprehensive understanding of the need for climate change adaptation among decision-makers and citizens in all Austrian municipalities.
- 3 Mutual learning between regions and knowledge transfer are actively practised.
- 4 Promotion of social, ecological, organisational and institutional solutions for climate change adaptation
- 5 Strengthening social capital to increase resilience in communities and regions

### **4.2.2 Specific goals**

- 1 By 2040, all municipalities will have participated in programmes dealing with climate change adaptation (such as LEADER, KLAR, KEM, e5, klimaaktiv, Pioneer Cities, KIG distribution).
- 2 Suitable formats for citizen engagement have been established and can be transferred.
- 3 Formats for measuring awareness are established and regularly implemented.
- 4 Formats for regular information on climate change adaptation for municipalities have been established.
- 5 Programmes for climate change adaptation receive better structural support.
- 6 Resources for climate change adaptation have been expanded.

### **4.2.3 Operational Goals**

- 1 KLAR! and KEM managers receive more resources, more expertise and better integration into local processes.



- 2 By 2030, 30% more Austrian municipalities should be members of KLAR! regions than in 2024.
- 3 Expansion of resources for *natural hazards in climate change preparedness check* (by the Federal Environment Agency in cooperation with the federal states and the BMLUK)
- 4 Training courses, targeted further education measures and training for climate change adaptation experts in municipalities have been designed and are being offered across the country.
- 5 Networking activities with stakeholders in mission-relevant research projects take place.
- 6 Suitable formats for involving and informing citizens are part of the standard repertoire for implementing climate change adaptation measures.
- 7 Future dialogues and climate dialogues with the broad involvement of civil society will be continued.
- 8 Comprehensive implementation and scaling of NbS

### 4.3 Measures and instrument e

#### 4.3.1 Climate-resilient regions and socio-ecological resilience

Adaptation must take place primarily at regional level. Close cooperation between the federal government, state, region and municipalities is important to ensure that this is done in a resource-efficient and structured manner. Depending on the topic, sectoral experts must be involved. These requirements demand close dialogue between the existing structures. The "Climate Change Adaptation" competence centre could complement the KLAR! service platform could provide a suitable networking framework.

In Austria, Climate and Energy Model Regions (KEM) and Climate Change Adaptation Model Regions (KLAR!) are programmes that have been focusing on the implementation of regional climate protection and adaptation measures for several years. The KEM programme also offers additional advantages (co-benefits) in the area of mitigation to strengthen adaptation. In these programmes, municipalities and regions can play a key role in shaping how climate policy is implemented locally. The large-scale expansion and strengthening of these programmes is an urgent task. The aim is for all municipalities in Austria to have addressed climate change adaptation by 2040, thereby providing a framework for the implementation of social, ecological and technical solutions.

With a regional approach and the networking of regions, it is possible to plan beyond traditional municipal boundaries. For this reason, the establishment of model project regions in the KLAR! and KEM programme is planned from 2025. In the KEM and KLAR! regions, common thematic priorities are to be set in order to implement measures for a system transformation. Possible topics include resilience, soil protection and just transition. The priority regions will be selected in a climathon.

These model regions are intended to test possible solutions and demonstrate systemic transformation (adaptation pathways). Their findings will then be rolled out (disseminated) in other regions as an orientation aid. In this way and by means of implementation support, assistance will be offered in the adoption of good practice.



### Ongoing measures

- **ACCORD:** The project, which is funded by the Climate and Energy Fund, is currently investigating how communities can be mobilised to take action to adapt to climate change. The researchers are focussing on "Climate Governance Capacities" as the necessary structures, resources and networks for effective political action and are using so-called "Protection Motivation Theories" to test protective actions by assessing the threat and their own coping options in communities in Lower Austria that are severely affected by natural hazards caused by climate change. Results are expected to be available at the beginning of 2025.
- Modular courses organised by the Climate Alliance in Carinthia and Upper Austria on the topics of climate change adaptation and climate protection for municipalities

### Future measures

- Accelerated expansion and strengthening of KLAR! and KEM regions
- Establishment of model project regions (from 2025) as frontrunner regions and dissemination of results to follower regions
- Strengthening (voluntary) organisations in the climate sector, e.g. heat campaigners for vulnerable groups
- Establishment of a training programme for certified climate change adaptation experts for local stakeholders
- Establishment of an event format for networking KLAR! and KEM managers with the project managers of mission-relevant research projects
- Continuation of the dialogue events held in the federal states in cooperation with the BMLUK, Environment Agency Austria and the Climate Fund

The costs can also be covered by earmarking portions of existing annual budgets for climate change adaptation (climate budgeting, see EU: 30% of the budget for climate activities). On the basis of the Municipal Investment Act (KIG) 2025, the federal government is providing an additional EUR 500 million for a new municipal investment programme in the years 2025 to 2027, with the federal government's co-financing share being increased from 50% to 80% compared to the previous programmes. The intended uses are essentially modelled on those of KIG 2023 and will also include climate change adaptation measures in future, which can be combined with other funding (KLAR!-Invest, Biodiversity Fund, klimaaktiv, etc.). Information on the specific start of applications and the guidelines on the specific use of the special-purpose grants and their processing will be announced in Q4 2024.

The Climate and Energy Fund's "Expert pool for municipalities and non-profit organisations" programme offers a possible source of funding to support the acquisition of projects in municipalities. Among other things, the programme provides funding support for EU projects, funding processing for climate and energy projects and citizen participation processes for climate action measures.

#### 4.3.2 Scaling of nature-based solutions

A specific objective of the EU Climate Change Adaptation Mission is to demonstrate systemic transformation towards climate resilience, e.g. large-scale projects to restore degraded ecosystems and ecological corridors and utilise nature-based solutions (NbS).



NbS are projects that are tailored to local biophysical, socio-economic, political and cultural conditions. As a rule, they cannot be transferred without various adaptations. Scaling therefore requires precise knowledge of the original context and the success factors. A distinction is made between the following forms of scaling:

- A "scaling out" is the repetition of an NbS in a similar context with minor adjustments.
- Scaling up" is used when the approach needs to be significantly adapted, e.g. when removing regulatory barriers at regional or national level.
- "Scaling deep" addresses the prevailing socio-economic drivers of biodiversity loss and landscape degradation and may involve changes in values, policies and institutions. It is a transition to sustainability at the landscape level.

In order to prevent potential conflicts and create social acceptance when planning and implementing NbS measures, the involvement of local stakeholders is essential. In this way, socio-economic and cultural factors can also be taken into account and local knowledge can be integrated into the process.

In addition to supporting demonstration projects (see [3.3.2.2](#)), innovative measures also include the development of innovative business, management and financing models as well as economic evaluation methods (including the early involvement of businesses). The approaches developed in the transdisciplinary research projects for locally adapted NbS for the implementation of socio-ecological transformation (see [3.3.2.3](#)) are applied here and rolled out on a large scale. The establishment of citizen engagement formats plays a central role in the implementation of NbS measures. Possible formats include citizen science projects in the planning phase, e.g. by recording measurements and observations, the active involvement of citizens and especially vulnerable groups in the design and decision-making process of climate change adaptation measures or the joint inspection of NbS construction projects in the implementation phase.

### Ongoing measures

- ARCADIA: The European mission project with the participation of the province of Lower Austria is developing NbS for adaptation to climate change in several Lower Austrian regions, among others, for imitation by other European regions.
- LAND4CLIMATE: The mission project aims to strengthen the resilience of regions to climate change through the use of NbS. The Lafnitz Valley is involved as a model region and the Weinviertel as a reproducing region.
- Invest4Nature: As part of the project, NbS for climate change adaptation is being trialled in a living lab in Tyrol, particularly in the areas of forestry and river management.

### Future measures

- From 2025 Development of advisory services for companies for the introduction of climate change adaptation measures (also includes NbS)
- Presentation of the piloted NbS measures on a virtual marketplace
- NbS buddies for implementation in municipalities, regions and companies

The costs can also be covered by earmarking portions of existing annual budgets for climate change adaptation (climate budgeting, see EU: 30% of the budget for climate activities). In 2025, the Municipal



Investment Act (KIG) also allows special purpose grants to be awarded for investments, maintenance and refurbishment to adapt to climate change. In addition, the European Investment Bank's Natural Capital Finance Facility offers financing options.

#### **4.4 Target groups**

KLAR! and KEM regions, municipalities, regions, companies, NGOs, interested citizens

#### **4.5 Results**

##### **4.5.1 Outputs**

- Realisation of NbS projects
- Citizen participation in the implementation of NbS projects takes place.
- Networking of KLAR! and KEM managers with mission-relevant research projects
- Cooperation between civil society organisations, institutions (e.g. schools), companies, local associations and KLAR! and KEM managers as well as local decision-makers
- From 2028, municipalities and regions in Austria will have access to innovative and environmentally friendly measures and solutions via the virtual marketplace that have been tested and are scalable, enabling regions and municipalities to transform themselves to become more resilient to climate change.

##### **4.5.2 Outcomes**

- KLAR! and KEM networks are better supported structurally
- Greater appreciation and visibility of actors who are committed to climate change adaptation in regions and municipalities
- Increased synergies and efficiency in the implementation of climate adaptation measures
- Expansion of competences at central and relevant locations in regions and municipalities
- Creating awareness among stakeholders and decision-makers
- Acquisition, expansion and transfer of practical knowledge on climate change adaptation
- Increased acceptance and active participation in climate change adaptation measures
- Increased coherence and cooperation between all parts of society

##### **4.5.3 Impacts**

- There is an increased awareness of the opportunities for climate change adaptation through NbS and its necessity among decision-makers, businesses and citizens.
- There is a system of targeted support services (resources, knowledge and exchange formats) to strengthen the ability of regions and municipalities to counter the risks posed by climate change.
- By implementing NbS across the board, embedding it in regional and local conditions and involving citizens, good climate change adaptation can be promoted and maladaptation prevented.



## 5 Connection with other policy areas

The national implementation of the EU mission "Adaptation to Climate Change" – like the EU mission itself – supports the objectives of various policy areas and relies on synergies with other missions, primarily Mission Cities, Mission Waters and Mission Soil.

The Paris Agreement placed adaptation to climate change on an equal footing with climate protection. Austria has been pursuing this two-pillar approach in climate policy for several years and has its own strategy for adaptation to climate change with its own action plan for implementation (Austrian Strategy for Adaptation to Climate Change, 2012; expanded in 2017 and 2024). There are correspondingly large overlaps with this action plan and the measures it contains. This action plan is also an element of Austria's contribution to the implementation of the European Commission's European Green Deal with the aim of realising a climate-resilient and climate-neutral society in Europe by 2050 that is fully adapted to the unavoidable consequences of climate change. To achieve this, many companies and businesses will have to make a transition in their operating model in order to meet the changed requirements and achieve the targets set. Climate change adaptation measures should be presented in the transition plans. Furthermore, measures and activities to adapt to climate change must be designed in a socially just manner (*good adaptation practice*). Climate change adaptation measures therefore also include the topics of just transition and just adaptation.

The ongoing and planned implementation of these measures will also contribute to the United Nations Sustainable Development Goals, in particular SDG 13 ("Take urgent action to combat climate change and its impacts") and target 13.3 on raising awareness of human and institutional capacities for climate adaptation.

The Austrian RTI Strategy 2030 and the RTI Pact derived from it provide an important framework for the implementation of the missions. In addition to the goal of increasing participation in EU missions, the following objectives are key: supporting applied research and its impact on the economy and society, RTI to achieve climate targets, raising awareness of the value of research and innovation in the public interest, expanding research and technology infrastructure (FTIS) and ensuring accessibility.

Numerous climate change adaptation measures have therefore already been and are being implemented in Austria and yet the progress reports on the Austrian strategy for adaptation to climate change have shown that, despite recognisable progress in all fields of activity, there is still a need for further action. The effects of climate change are still insufficiently taken into account in relevant strategic decisions. As the results of the COIN project<sup>3</sup> show, the lack of implementation of climate change adaptation measures is expected to result in considerable costs (2–6 billion EUR per year) by 2050. This underlines the urgency of thinking about and implementing climate change adaptation to a greater extent and giving it a higher priority on the political agenda.

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<sup>3</sup> COIN (COst of INaction), funded by the Climate and Energy Fund as part of the ACRP,



In the Austrian Recovery and Resilience Plan (ARF, BMF 2021), a share of 46 % is earmarked for climate protection purposes, which should also address synergies with climate change adaptation goals. Based on the Biodiversity Strategy Austria 2030+, the Biodiversity Fund supports nature-based adaptation measures and strengthening the resilience of ecosystems. After all, functioning and intact ecosystems are essential for adapting to climate change. The Biodiversity Fund places a special focus on the conservation of biodiversity in areas that are particularly sensitive to climate impact. In addition, the ARF consistently takes into account the so-called "Do no Significant Harm" principle within the meaning of the Taxonomy Regulation. This means that it must be ensured that none of the measures run counter to the EU's environmental objectives (which also include adaptation to climate change).

### **EU Restoration law**

The successfully adopted EU Restoration Act aims to restore damaged ecosystems and habitats to a good state by 2050. It strengthens an essential basis for prosperity, the economy and food security in Austria. From agricultural landscapes to green spaces and bodies of water to forests - many different habitats are covered by the planned EU regulation. Intact ecosystems form the basis for maintaining our prosperity and well-being. They contribute to the preservation of biodiversity, are important as carbon sinks for climate protection, regulate the water balance and are the basis for sustainable food and raw materials. They also provide protection against natural hazards and extreme events, which are becoming more intense and more frequent due to climate change. Last but not least, intact habitats are also valuable recreational areas that must be preserved for future generations. The national implementation of the EU Restoration Act therefore also supports the achievement of the Climate Change Adaptation Mission.

## **5.1 Synergies between the three impact pathways**

The three impact pathways - networking and coordination, research and implementation - are integral components of a coherent approach to climate change adaptation in Austria. They do not act in isolation from one another, but rather interact with one another through clear synergies and interfaces in order to drive forward the transformation process towards climate-resilient structures.

**Impact pathway I:** Networking and coordination provides the necessary platform to connect stakeholders from different areas - from administration and science to civil society. This networking creates the framework in which the results from research (impact pathway II) and the concrete implementation measures (impact pathway III) can be effectively integrated and coordinated. A strong networking and coordination structure promotes the exchange of knowledge and experience and enables gaps in implementation to be identified and innovative solutions, such as nature-based measures, to be scaled up.

**Impact pathway II:** Research provides the scientific basis and data required to identify risks and develop customised adaptation strategies. The data and models generated by research are crucial for supporting the actors in impact pathway III in practical implementation. At the same time, research plays an important role in evaluating the effectiveness of implementation measures and improving them in the long term, particularly through nature-based solutions.



**Impact pathway III:** Implementation is the operational arm that drives forward concrete adaptation measures in the regions. The measures not only draw on the solutions developed in research, but also benefit directly from the networking and coordination mechanisms of impact pathway I, which ensure the transfer of knowledge and the involvement of relevant stakeholders. This strengthens projects with high replicability, while innovative approaches, for example in the area of social and ecological resilience, are underpinned by research results.

By systematically dovetailing these three impact pathways, redundancies can be avoided, synergy effects can be realised and a coordinated approach can be ensured to move Austria forward on the path to a climate-resilient future.

## 6 Governance

By linking with European and national programmes, the implementation of the EU mission "Adaptation to Climate Change" in Austria is integrated into governance structures at European and national level:

### European level

The governance structures at European level serve as a model for the structures at national level: the mission is led at the European Commission (EC) by Mission Manager Elina Bardram from the Directorate-General (DG) for Climate Action and Deputy Mission Manager Philippe Tulkens from the DG for Research and Innovation. A Mission Secretariat manages the Mission and ensures interactions with other programmes, Member States and stakeholders. As with all missions, the Mission Manager and the Deputy Manager act as joint chairs of the Mission Owners Group. The Mission Owners Group is composed of the most important EC services. This group meets regularly and discusses the implementation of the Adaptation to Climate Change mission. The implementation of the mission is also supported by the European Climate, Infrastructure and Environment Executive Agency (CINEA) and the Mission Implementation Platform (MIP4Adapt) as well as the Climate ADAPT platform of the European Environment Agency.

### National level

The Mission Action Group (MAG) Climate has discussed the necessary initiatives for the national implementation of the mission objectives. It operates within the framework of national governance, which was designed by the former BMBWF (now BMBWF). The Mission Management Group and the Research, Technology and Innovation (RTI) Task Force Working Group "EU Missions" were set up as overarching bodies. The Mission Management Unit supports the



Overview of the governance structures for the national implementation of EU missions in Austria



departments and MAG Climate in their work and the Mission Facility is responsible for monitoring the implementation of the action plans. The graphic below provides an overview of this structure. The aim is to involve all relevant stakeholders on this topic in an appropriate manner.

A key success factor for effective adaptation is that the people involved have a common understanding and the same level of knowledge. They must be prepared to proactively address open questions in planning and implementation. A cooperative approach and close collaboration between science, practice and decision-makers are crucial for success. This requires appropriate governance.

The challenge lies in the fact that adaptation is a cross-cutting issue. In addition, climate change adaptation governance is embedded in a multi-level policy system. Adaptation measures can only be successful if the federal, state and local authorities act in a coordinated manner. There are specific recommendations for Austria in this regard<sup>4</sup>. These include using extreme weather events as a "window of opportunity", reaching fundamental decisions, defining clear responsibilities, involving external expertise, organising cooperation and seeking synergies with existing measures. This is how climate change adaptation governance can be organised in Austria (Lexner et al. 2020).

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<sup>4</sup> Lexner, W.; Stickler, T.; Buschmann, D.; Steurer, R.; Feichtinger, J. (2020): Climate change adaptation in small Austrian municipalities. Inhibiting factors, success factors, recommendations. Synthesis report of the project GOAL - Governance of Local Adaptation to Climate Change. Vienna.



## 7 Monitoring and evaluation

Based on the action plan developed and agreed in 2024, a Monitoring & Evaluation Framework (M&E Framework) will be developed in 2025 to support implementation. Once developed, it will be empirically tested in an initial pilot survey to determine reference data. The monitoring serves to gather evidence on the progress and impact of the implementation of the mission. The basis for this is provided by coordinated, continuous empirical surveys and an overall presentation of all five EU missions in Austria. The M&E Framework offers the Mission Action Groups a tool for reflecting on their own work, for policy learning and as a basis for necessary adaptation and management measures.

Different requirements are taken into account when developing the M&E framework:

- 1 The M&E framework is intended to provide the conceptual and methodological framework for the collection of monitoring data up to and including 2027.
- 2 Two types of indicators need to be developed: Mission-specific indicators and indicators that are meaningful across multiple missions. Both output and outcome indicators are taken into account.
- 3 Issues relating to the relevance, validity and reliability of the indicators as well as the availability and accessibility of the required data are agreed in advance with the five Mission Action Groups.
- 4 The validated indicators form the basis for an initial pilot survey in order to have reference data available for subsequent years.
- 5 As the implementation of the action plans of the five missions has only recently started, in 2025 the focus will be on qualitatively recording and visualising implementation successes and inspiring practices.

The results of the first monitoring survey are summarised and published in the annual implementation report.



## 8 Appendix

### 8.1 Glossary

*Definition of various recurring terms in the document*

#### **Good practice of adaptation or avoidance of mismatch, see NAS Chapter 3, 7**

For adaptation measures to be successful, they must therefore be well thought out, planned and implemented. *Good adaptation practice goes* hand in hand with the goals of sustainable development and climate protection. A number of criteria are available to achieve them:

- effectively and permanently reduces vulnerability to negative climate impacts.
- supports climate protection and does not lead directly or indirectly to an increase in greenhouse gas emissions.
- is prudent and does not shift the impact to other regions or areas.
- contributes to the preservation and improvement of the environment and biodiversity
- takes social aspects into account by not placing a disproportionate burden on vulnerable social groups such as low-income people, the elderly or children and leads to a fair distribution of costs and benefits.
- is based on the broadest possible acceptance among the population and all stakeholders concerned.
- is financially justifiable as well as effective and efficient in terms of a favourable cost-benefit ratio.
- is designed to be flexible so that it can be modified with little effort if necessary.
- ideally also has positive side effects on the environment and society independently of climate change.

Maladaptation refers to measures that are predominantly reactive and, as pure symptom control, are promising in the short term at most, but prove to be counterproductive in the long term. *Avoiding maladaptation* has been one of the key objectives of the Austrian Adaptation Strategy since 2012 and must be a major focus in the coming years.

#### **Nature-based solutions (NbS)**

Definition of the European Commission: [Nature-based solutions are] solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions.

This definition is currently used by UN conventions such as the CBD and UNFCCC. The EC definition is in line with the UNEA definition, as both emphasise the critical importance of NbS for human well-being, ecosystem services and biodiversity.



First [definition by the International Union for Conservation of Nature and Natural Resources \(IUCN\)](#) from 2016: Nature-based Solutions are actions to protect, sustainably manage and restore natural and modified ecosystems in ways that address societal challenges effectively and adaptively, to provide both human well-being and biodiversity benefits.

[Definition of the UN Environment Assembly \(UNEA\)](#) from 2022: Nature-based solutions are actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits.

### **Resilience**

Resilience refers to the ability of social, economic and ecosystems to cope with a dangerous event, trend or disruption. It includes the ability to reorganise and learn. (IPCC, 2023: Sections. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change)