

MISSION CE CLIMATE

# CLIMATE RESILIENCE

# GUIDEfor COMMUNITIES

✓ BUILDING CLIMATE RESILIENT CITIES AND COMMUNITIES

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### The Climate Resilience Guide

#### THE OBJECTIVE

### Building Climate Resilient Cities and Communities

The goal of the Climate Resilience Guide is to foster the development of urban environments more resilient and better adapted to the consequences of the climate change. By obtaining political support, conducting comprehensive risk assessments, finding, and evaluating the best adaptation plans, implementing these plans effectively, and continuously monitoring and evaluating progress, municipalities can develop robust and sustainable strategies to combat climate change. The Climate Resilience Guide provides a structured and detailed approach for cities and communities to enhance their climate resilience through six key steps. This holistic approach ensures that cities and communities are wellprepared to face climate-related challenges, safeguarding their communities and promoting long-term resilience. Through diligent planning, collaboration, and ongoing assessment, cities and communities can not only mitigate the impacts of climate change but also seize opportunities for sustainable growth and development.





#### A pathway to a more resilient and sustainable future

By following the Climate Resilience Guide, stakeholders can work towards creating cities and communities that are not only prepared for climate change but also thrive in the face of it, ensuring a sustainable and resilient future for all residents.

The Climate Resilience Guide has been produced within the project MISSION CE CLIMATE – Climate Resilient Communities of Central Europe. This project is supported by the Interreg CENTRAL EUROPE Programme with co-financing from the European Regional Development Fund. It builds heavily on and refers to existing methods developed in the framework of different European partnerships. Those are more specifically:

The Urban Adaptation Support Tool and the Regional Adaptation Support Tool from Climate-ADAPT. The European Climate Adaptation Platform Climate-ADAPT is a partnership between the European Commission and the European Environment Agency.

**The European Resilience Management Guideline** from the Smart Mature Resilience project, funded from the Union's Horizon 2020 research and innovation programme.

**d The Making Cities Resilient 2030 (MCR2030) platform,** hosted by the UNDRR - United Nations Office for Disaster Risk Reduction.

#### Introduction to the climate resilience guide

The Climate Resilience Guide outlines a comprehensive framework for cities and communities to effectively plan, implement, and monitor climate adaptation strategies. By following the six crucial steps, municipalities can enhance their resilience to climate change and ensure sustainable development.

**Step 1** emphasizes the importance of preparation, including securing political support, collecting initial information, setting up processes, obtaining resources, engaging stakeholders, and communicating adaptation efforts effectively. These foundational activities create a sturdy base for the subsequent steps.

**Step 2** focuses on conducting a thorough risk assessment by analyzing past and present climate impacts, understanding future projections, identifying vulnerable sectors, conducting comprehensive assessments, considering the role of surrounding areas, and defining primary adaptation concerns. This step ensures a holistic understanding of climate risks and vulnerabilities.

**Step 3** involves finding the best adaptation plan by creating a catalogue of relevant adaptation options, finding

examples of good practices, and performing a self-check. This step allows cities and communities to systematically evaluate and select the most suitable adaptation measures.

**Step 4** is dedicated to evaluating and selecting adaptation plans. This involves choosing an assessment framework, conducting cost-benefit analyses, prioritizing options, and assessing and selecting the best measures through a selfcheck. These activities help municipalities make informed decisions that maximize resilience and sustainability.

**Step 5** covers the implementation phase, which includes designing an effective adaptation action plan, finding examples, mainstreaming adaptation in urban policies, addressing climate change through both adaptation and mitigation, and performing a self-check. This step ensures that adaptation measures are integrated into existing urban policies and effectively implemented.

**Step 6** focuses on adaptation monitoring and evaluation. Developing a monitoring approach, defining indicators, finding examples, using monitoring results to enhance the process, and performing a self-check are key tasks. This ensures the continuous effectiveness and sustainability of the adaptation efforts.

By systematically following these steps, cities and communities can build robust climate adaptation strategies.

#### **STEP 1 | PREPARATION**

- 1.1 Gaining political backing for adaptation efforts
- 1.2 Gathering initial data and information
- 1.3 Establishing adaptation processes within and outside the municipality
- 1.4 Securing human and technical resources
- 1.5 Sourcing financial support and funding
- 1.6 Engaging and involving stakeholders
- 1.7 Effectively communicating adaptation plans to diverse audiences
- 1.8 Seeking additional support and resources
- 1.9 Laying the groundwork for adaptation: Self-evaluation

#### STEP 2 | RISKASSESSMENT

- 2.1 Recognizing past and currentclimate impacts
- 2.2 Analyzing climate projections and anticipating future impacts
- 2.3 Identifying sectors with heightened vulnerability
- 2.4 Conducting comprehensive risk and vulnerability assessments
- 2.5 Considering the influence of surrounding areas on adaptation
- 2.6 Defining primary adaptation concerns and setting objectives
- 2.7 Assessing climate change risks and vulnerabilities: Self-evaluation

#### STEP 3 | FINDING THE BEST ADAPTATION PLAN

- 3.1 Creatinga list of successful adaptation options
- 3.2 Finding and analyzing examples of successful adaptation practices
- 3.3 Conducting a self-assessment to evaluate and refine compiled adaptation options

#### STEP 4 | EVALUATING AND SELECTING THE ADAPTATION PLANS

- 4.1 Selecting an evaluation framework for adaptation options
- 4.2 Performing a cost-benefit analysis of adaptation measures
- 4.3 Ranking adaptation options
- 4.4 Reviewing and choosing adaptation options: Self-evaluation

#### **STEP 5 | IMPLEMENTATION**

- 5.1 Creating an effective adaptation action plan
- 5.2 Finding examples of successful adaptation plans
- 5.3 Integrating adaptation into urban policies and strategies
- 5.4 Combining adaptation and mitigation efforts
- 5.5 Implementing adaptation: Self-evaluation

#### STEP 6 | ADAPTATION MONITORING AND EVALUATION

- 6.1 Developing a monitoring and evaluation approach
- 6.2 Defining appropriate monitoringindicators
- 6.3 Finding examples of effective monitoring indicators
- 6.4 Utilizing monitoring results to enhance adaptation processes
- 6.5 Monitoring and evaluating adaptation: Self-evaluation

# Step 1 | Preparation

The first step of the Climate Resilience Guide for cities and communities focuses on preparation. This foundational phase is critical for establishing a solid groundwork for effective climate adaptation strategies. It involves securing high-level political support, gathering comprehensive information, setting up necessary processes, and engaging with key stakeholders and the public. Each of these elements plays a vital role in ensuring a comprehensive and inclusive approach to building climate resilience.

Securing political support is essential for successful adaptation. This involves educating policymakers on the importance of proactive adaptation measures, which can lead to long-term cost savings and improved public health. Collecting initial information is another crucial aspect, requiring the gathering of data on current and projected climate impacts, ongoing adaptation activities, and best practices from other communities. Collaboration with experts to fill knowledge gaps and enhance capacity is key. Establishing robust adaptation processes within and beyond the municipality is also necessary. This includes forming dedicated adaptation units or integrating adaptation efforts into existing departments to ensure consistency and continuity. Identifying and securing human and technical resources is critical, as is ensuring financial support through various funding sources. Engaging stakeholders and communicating adaptation needs effectively to different target audiences are essential steps to foster collaboration and support.

Overall, the preparation phase ensures that cities and communities are well-equipped to tackle the challenges posed by climate change, laying the groundwork for a resilient and sustainable future.

#### Activities

For the successful implementation of this step, the following activities should be undertaken:

- 1.1 Gaining political backing for adaptation efforts
- 1.2 Gathering initial data and information
- 1.3 Establishing adaptation processes within and outside the municipality
- 1.4 Securing human and technical resources
- 1.5 Sourcing financial support and funding

- **1.6 Engaging and involving stakeholders**
- 1.7 Effectively communicating adaptation plans to diverse audiences
- 1.8 Seeking additional support and resources
- 1.9 Laying the groundwork for adaptation: Self-evaluation

#### <u>How to move ahead</u>

<u>The Urban Adaptation Map Viewer</u> from the European Environment Agency provides an overview of the current and future climate hazards facing European cities, including maps and related data. It is a useful tool for gathering initial data and raising awareness about climate hazards. A good place to start with for a broad overview of the issues at stake is the guide Strategy for Climate Resilient Communities of Europe developed by the **MISSION CE CLIMATE** partners have developed a methodology for implementing a comprehensive Risk and Vulnerability Assessment. It can be downloaded from the project's website as well as from the www.climatehub.si platform.

## Step 2 | Risk assessment

The second step focuses on conducting a comprehensive risk assessment. This step is crucial for understanding the various climate-related risks that a city faces, both currently and in the future. By analyzing past and present climate impacts, understanding future climate projections, and identifying vulnerable urban sectors, municipalities can develop targeted adaptation strategies. This step also involves conducting thorough risk and vulnerability assessments, understanding the role of surrounding areas, and identifying main adaptation concerns and objectives. Each of these elements ensures a holistic approach to managing climate risks and building resilience.

Recognizing past and present climate impacts is vital for gaining insights into current vulnerabilities and potential future challenges. This involves analyzing historical data on extreme weather events to understand their frequency, intensity, and impacts. Understanding climate projections and future impacts is equally important, as it allows for planning based on anticipated changes in climate conditions, such as more frequent extreme weather events and new hazards like sea level rise or water scarcity. Identifying vulnerable urban sectors helps prioritize adaptation efforts by focusing on areas with higher susceptibility or lower adaptive capacity. This includes assessing the ability of different sectors to cope with climate impacts based on factors like technology, infrastructure, and social equity. Conducting risk and vulnerability assessments combines knowledge of climate hazards and vulnerable sectors to create a comprehensive picture of a city's climate risks.

Understanding the role of surrounding areas in adaptation highlights the interconnectedness between urban centers and their surrounding regions. Cities and communities rely on these areas for essential services and resources, making it crucial to consider regional impacts and collaborate with neighboring administrations. Identifying main adaptation concerns and defining objectives sets a strategic direction for adaptation planning, ensuring that efforts are focused on the most immediate and severe risks, and leveraging existing strategies and resources.

This step ensures that cities and communities have a thorough understanding of their climate risks and vulnerabilities, enabling them to develop effective adaptation strategies and build resilience.

#### **Activities**

For the successful implementation of this step, the following activities should be undertaken:

- 2.1 Recognizing past and current climate impacts
- 2.2 Analyzing climate projections and anticipating future impacts
- 2.3 Identifying sectors with heightened vulnerability
- 2.4 Conducting comprehensive risk and vulnerability assessments
- 2.5 Considering the influence of surrounding areas on adaptation
- 2.6 Defining primary adaptation concerns and setting objectives
- 2.7 Assessing climate change risks and vulnerabilities: Self-evaluation

#### <u>How to move ahead</u>

The **MISSION CE CLIMATE** partners have developed a methodology for implementing a comprehensive Risk and Vulnerability Assessment. It can be downloaded from the project's <u>website</u> as well as from the <u>www.climatehub.si</u> platform.

#### **FURTHER USEFUL TOOLS**

The Risk Systemicity Questionnaire from the Smart Mature Resilience project and the Quick Risk Estimation tool from the United Nations Office for Disaster Risk Reduction The Urban Adaptation Map Viewer from the European Environment Agency The Adaptation Dashboard from the European Environment Agency provides insights in the climate hazards identified by many European regions and cities.



### Step 3 | Finding the best adaptation plan

The third step focuses on identifying and selecting the most effective adaptation measures to address the specific climate risks faced by urban areas. This step involves creating a comprehensive catalogue of relevant adaptation options, finding examples of successful adaptation practices from other cities and communities, and conducting a self-assessment to ensure the chosen measures are well-suited to the local context. By systematically exploring various adaptation strategies, municipalities can develop tailored approaches that enhance urban resilience and address specific climate hazards.

Creating a catalogue of relevant adaptation options is essential as urban areas often face multiple climate hazards simultaneously. This involves compiling a broad range of adaptation measures that cover technological, informational, organizational, behavioral, ecosystembased, and socio-economic aspects across various governance levels and sectors. The catalogue should include measures aimed at accepting climate impacts, offsetting losses, reducing exposure and vulnerability, and exploiting new opportunities.



Finding examples of good adaptation practices is also critical. By identifying cases and examples from other cities and communities that have successfully implemented adaptation actions, municipalities can learn from their experiences and apply proven strategies to their own context. Observing successful adaptation measures elsewhere provides additional credibility and valuable insights for developing effective strategies.

This step ensures that the chosen adaptation measures are appropriate and effective for the specific urban context of each city.

#### <u>Activities</u>

For the successful implementation of this step, the following activities should be undertaken:

- 3.1 Creating a list of successful adaptation options
- 3.2 Finding and analyzing examples of successful adaptation practices

3.3 Conducting a self-assessment to evaluate and refine compiled adaptation options

#### How to move ahead

Several web-based platforms provide access to good examples of adaptations measures already implemented in cities.

The Climate ADAPT platform from the European Environment Agency provides insights in the adaptation policies and actions identified by many European regions and cities. The platform also provides an overview of <u>potential adaptation options</u> categorised according to the IPCC-Intergovernmental Panel on Climate Change system.

The Resilience Maturity Model from the Smart Mature Resilience project provides a comprehensive overview of relevant policies in the areas Leadership and Governance, Preparedness, Infrastructure and Resources, Cooperation. Also, the MCR2030 platform form the United Nations Office for Disaster Risk Reduction provides examples of adaptation measures from all over the world. It requires registration and membership is limited to local governments (cities).

The **MISSION CE CLIMATE** partners have developed a methodology for developing local Community Climate Resilience Action Plans. It can be downloaded from the project's website as well as from the www.climatehub.si platform. The platform www.climatehub.si equally aims to display relevant examples of successful adaptation examples.

# Step 4 | Evaluating and selecting the adaptation plans

The fourth step of the Climate Resilience Guide focuses on evaluating and selecting the most effective adaptation plans. This phase involves assessing different adaptation options, conducting a cost-benefit analysis, prioritizing suitable measures, and performing a self-check to ensure thorough consideration. By systematically evaluating adaptation options, municipalities can make informed decisions to maximize resilience and sustainability.

The first task is choosing an assessment framework for adaptation options. It is essential to compare options effectively and facilitate communication with decision-makers by using agreed criteria such as effectiveness in reducing vulnerability, sustainability impacts, and costs. Coordinating the assessment across political, legal, and institutional actors can enhance synergies and prevent maladaptation. Decision-makers should aim for "win-win" options that deliver multiple benefits or "no-regret" options that are beneficial regardless of future climate change. Each option should be evaluated on its ability to achieve adaptation targets and its broader social and environmental impacts.

Next, conducting a cost-benefit analysis of adaptation measures helps prioritize and allocate resources effectively. This analysis compares the costs and benefits of different measures, predicting whether the benefits outweigh the costs and how they compare to other alternatives. Adaptation costs include planning, preparing, facilitating, and implementing measures, while benefits encompass avoided damage costs and accrued advantages. It is also important to account for the residual risk costs, which are the impacts that remain after implementing the measures. Prioritizing adaptation options follows the cost-benefit analysis. A Multi-Criteria Analysis (MCA) can be particularly useful for ranking and selecting the most suitable options. The preferred list of adaptation actions should be agreed upon with stakeholders, who should be involved in the MCA to incorporate diverse values and criteria. The selection process should recognize various viable options and their combinations, including:

 "No-regrets adaptation options" that are beneficial regardless of future climate change.

 "Low-regrets options" that have relatively low costs but potentially high benefits under projected future climate conditions.

- "Win-Win options" that not only minimize climate risks but also contribute to other social, environmental, or economic goals.
- "Flexible or adaptive management options" that can be adjusted easily and cost-effectively if circumstances change.
- "Multiple-benefit options" that provide synergies with other goals like mitigation, disaster risk reduction, and environmental management.

These types of options should be favored due to the broad range of potential future climate impacts and associated uncertainties. Focusing on options with multiple benefits can also facilitate funding by pooling resources and emphasizing shared benefits that outweigh the investments.

#### **Activities**

For the successful implementation of this step, the following activities should be undertaken:

- 4.1 Selecting an evaluation framework for adaptation options
- 4.2 Performing a cost-benefit analysis of adaptation measures
- 4.3 Ranking adaptation options
- 4.4 Reviewing and choosing adaptation options: Self-evaluation

#### How to move ahead

The Urban Adaptation Support Tool from the Climate ADAPT platform also provides useful recommendations and access to more specific tools, especially for performing a cost-benefit analysis of climate adaptation measures.

# Step 5 | Implementation

The fifth step of the Climate Resilience Guide focuses on the implementation of the selected adaptation plans. This stage involves designing an effective adaptation action plan, finding examples of successful adaptation action plans, mainstreaming adaptation into urban policies, addressing climate change through both adaptation and mitigation, and conducting a self-check to ensure thorough implementation. By following these steps, municipalities can effectively translate their resilience strategies into concrete actions that enhance their ability to cope with climate change impacts.

Designing an effective adaptation action plan is the first task in this step. This framework should integrate the findings from previous steps and be subject to public consultation and formal recognition by relevant local authorities to ensure its legitimacy and effectiveness. The plan must be comprehensive, considering all identified risks, vulnerabilities, and selected adaptation options. Mainstreaming adaptation into urban policies and plans ensures that adaptation efforts are not isolated but integrated into the existing urban policy framework. This approach enhances resource efficiency, identifies synergies between development and adaptation, and reduces policy conflicts. Adaptation should be incorporated into sectoral policies like water management, transport, built environment, and health to maximize its effectiveness and impact.

Addressing climate change requires a dual approach of adaptation and mitigation. While mitigation focuses on reducing greenhouse gas emissions, adaptation aims to increase resilience to climate impacts. Integrating these two approaches ensures that both efforts work synergistically to achieve their respective goals. Coordination between stakeholders involved in mitigation and adaptation planning is crucial for continuous feedback and cross-checking.

#### <u>Activities</u>

For the successful implementation of this step, the following activities should be undertaken:

- 5.1 Creating an effective adaptation action plan
- 5.2 Finding examples of successful adaptation plans
- 5.3 Integrating adaptation into urban policies and strategies
- 5.4 Combining adaptation and mitigation efforts
- 5.5 Implementing adaptation: Self-evaluation

#### How to move ahead

The Community Climate Resilience Action Plans designed by the **MISSION CE CLIMATE** partners provides a hands-on methodology and template for preparing and documenting a climate resilience adaptation plan. It covers areas such as:

- Community/public and social infrastructure
- Human health and wellbeing
- Biodiversity and ecosystem services
- Water management
- Rural landscapes and sustainable food systems.

It can be downloaded from the project's website as well as from the www.climatehub.si platform.

The platform <u>www.climatehub.si</u> equally aims to display examples of climate adaptation plans developed and implemented by different European communities.

### Step 6 | Monitoring and Evaluation

The sixth step of the Climate Resilience Guide focuses on the critical process of monitoring and evaluating adaptation efforts. This phase ensures that adaptation strategies remain effective and sustainable over time by implementing a structured approach to track progress, measure outcomes, and adjust actions, as necessary. The key tasks in this step include developing a monitoring and evaluation approach, defining appropriate indicators, finding examples of effective monitoring indicators, using monitoring results to enhance the adaptation process, and conducting a self-check to ensure thorough evaluation.

Developing the monitoring and evaluation approach is the first task in this step. It involves creating a dedicated monitoring and evaluation plan or strategy as part of the adaptation action plan. This approach helps local authorities track the implementation of adaptation actions and assess whether the main objectives set in the adaptation strategy are being met. Clear and specific objectives are crucial for a meaningful monitoring and evaluation process, and these objectives should be made measurable through well-defined indicators. Defining monitoring indicators is the next crucial task. Indicators are essential for tracking a city's progress and learning from the results. They provide quantifiable evidence of impacts, progress, and performance, making them attractive to policymakers and decisionmakers. However, selecting the most appropriate and practical indicators can be challenging due to data availability and the complexity of measuring actual progress toward increased resilience.

Finding examples of adaptation monitoring indicators can provide valuable inspiration. Local authorities can look to indicators developed by other cities and communities, research institutions, national frameworks, or international organizations. These examples can help shape a robust set of indicators tailored to the city's specific needs.

Using monitoring results to enhance the adaptation process is a vital part of the monitoring framework. Monitoring results should be used to revise and readjust the adaptation strategy and action plan, turning them into living documents that support continuous and consistent adaptation planning and implementation. Additionally, monitoring outcomes provide insights into the effectiveness of the monitoring system itself, indicating if any adjustments are needed. Lastly, evaluation results should be communicated to various stakeholders, from decision-makers to citizens, to inform and incentivize further action.

#### **Activities**

For the successful implementation of this step, the following activities should be undertaken:

- 6.1 Developing a monitoring and evaluation approach
- 6.2 Defining appropriate monitoring indicators
- 6.4 Utilizing monitoring results to enhance adaptation processes
- 6.5 Monitoring and evaluating adaptation: Self-evaluation
- 6.3 Finding examples of effective monitoring indicators

#### How to move ahead

The MISSION CE CLIMATE partners have developed two guides proving insights on monitoring and evaluation aspects:

- The guide on Strategy for Climate Resilient Communities of Europe,
- The methodology for implementing a comprehensive Risk and Vulnerability Assessment.

Both documents can be downloaded from the project's website as well as from the www.climatehub.si platform.

The Urban Adaptation Support Tool from the Climate ADAPT platform also provides useful recommendations.



### MISSION CE CLIMATE Project



#### Climate Resilient Communities of Central Europe

Central Europe faces many climate change challenges like the rest of the world. The main aim of the MISSION CE CLIMATE project is to overcome the disjointed sectoral responses to climate change by introducing a coordinated, cross-sectoral approach that puts local/ regional authorities at the centre of the governance and management of the climate resilience process. The overall objective is to support communities in Central Europe to become resilient to climate change and to enable them to respond in a coordinated way to the impacts caused by climate change. The project will build sustainable systems (community climate missions) and community capacities (integrated strategy, local action plans, and solutions).

#### THE PROJECT'S INTENDED OUTCOMES ARE:

 Establishment of climate resilience systems in partner communities (Community Climate Missions) supported by a joint 2030 Climate Resilience Strategy (definition of actions, business models, financing mechanisms) and locally tailored action plans (project portfolio approach);

2. Enhancing community capacity to adapt to climate change with new skills and tools;

 Activated citizens contributing to community climate resilience through increased awareness and capacity (tools, etc.);

 Solutions developed through pilot projects that respond to community adaptation challenges.

For more information on climate adaptation and good practices, consult our websites:

www.interreg-central.eu/projects/mission-ce-climate/

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The partnership includes the following organisations:



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