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ADAPTNOW

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PILOT PLANS

Activity A.2.1: Each targeted HAET (7) will design a pilot action for improving its local planning process based on T1 activities. Each pilot will focus on a set of shared hazards and sectors and aim at developing/ revising at least 2 adaptation measures through advanced integrated & participatory planning involving local stakeholders. WPL will provide a template and organize a webinar to share the plans among PPs. PP3, 6, 7, 8, 10, 11, 12 coordinate pilot activities with support of local partners. Contribution of all PPs.

March, 2024

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DOCUMENT CONTROL SHEET

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Short Description
<p>ADAPTNOW will work on strengthening the adaptive capacity of HAET by implementing and evaluating the available climate adaptation and risk mitigation management tools and practices, assessing the Climate Adaptation Plans and developing Climate Services to support the territories and their local public authorities. Ultimately, ADAPTNOW aims at making risk and adaptation planning more integrated, collaborative and inclusive. This will be reached through a more dynamic, agile and participatory planning process in which all local stakeholders need to be involved.</p>

Document Details	
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Abbreviations

CA	Climate Adaptation
CSS	Climate Support Service
LP	Lead partner
PL	Pilot
PP	Partner
RP	Reporting Period
RM	Risk mitigation
TT	target territory
WP	Working Package
WPL	WP leader

1. Introduction

As stated in the project proposal, the objective of this deliverable (D2.1) is to explain the plans of the seven regions about the pilot actions they will implement.

Each targeted HAET (7) will design a pilot action for improving its local planning process based on T1 activities. Each pilot will focus on a set of shared hazards and sectors and aim at developing at least two adaptation measures through advanced integrated & participatory planning involving local stakeholders.

WPL has provided an Excel template as overview and organized a webinar in June 2023 to share the plans among PPs. For this meeting all partners prepared a short Power Point Presentation. The EIV created an online survey for the report on the partners' plans. A similar structure of the contributions for this report was achieved with questions and corresponding text length.

PP 1, 3, 6, 7, 8, and 10 coordinate pilot activities with support of local partners and with contribution of all PPs. They gave their explanation of their plans in the online questionnaire.

The pilot plan contains objective of pilot, hazards, sectors, tools, practices and methodology.

2. Overview

Pilots Location	Pilot coordinator (within consortium)	Pilot support	Pilot action 1/2	Description of Pilot action	Hazards	Sectors
Grenoble-Alpes Métropol (F)	GAM	AURA-EE, IRMa and municipalities	1	Animation of a working group with municipalities on the topic of municipal information documents on major risks through Risk and Resilience Community	Floods, rock falls, landslides, wildfires, flash floods	Populations exposed to natural risks, including urban infrastructure.
			2	Involve municipalities in a workshop with CymaStory tool	Floods, rock falls, landslides, wildfires, flash floods	Forestry, urban infrastructure, tourism and health
Pusteria Valley (IT)	EURAC Research	LAG Regional Management, Pusteria Valley as Observer	1	Training foresters in the Pusteria Valley (South Tyrol) to enhance their knowledge and capabilities regarding future climate risks and adaptation measures in forestry.	Gravitational hazards, heavy precipitation, temperature increase, drought periods	Mainly forestry with support of adjacent sectors such as agriculture, tourism, nature conservation, spatial planning, and civil protection;
			2	Roadmap for enhancing climate change adaptation in the tourism sector of the Pusteria Valley	Increased temperatures, extreme weather	Tourism, including winter and summer outdoor recreational activities, hospitality services, and destination management;
Municipality of Chivasso, Piedmont Region (IT)	iiSBE Italia R&D	City of Turin, Piedmont Region, Polytechnic of Turin, Chamber of Architects, ARPA; UNCEM	1	Development of a "climate resilient" Master Plan, including adaptation measures to climate change.	Heatwaves, draught, heavy rainfall, floods	UI: railway, main roads, building sector
			2	Strengthening the skills of municipal planners and decision makers regarding the procedures for integrating adaptation measures	Heatwaves	Urban Infrastructure
City of Kempten (D)	Energy and Environmental Centre Allgaeu (ezal)	Energy and Environmental Centre Allgaeu (ezal)	1	Sun Detectives and Heat awareness raising campaign July 2024	Heatwaves, Heavy Rain	Urban Infrastructure, Health
			2	Model project for facade greening in cooperation with university of Stuttgart and Fraunhofer Institute;	Heat waves and coping with overheating in the city, loss of biodiversity;	Urban Infrastructure
Plan B Region (A)	Energy Institute Vorarlberg	EIV	1	Training programme for kindergartens and schools to make children aware of overheating in buildings and to implement practicable measures against overheating in consultation with building operators.	Heatwaves	Building sector
			2	Natural hazard check in two of the seven municipalities	Gravitational hazards, heavy precipitation, heatwaves;	Urban Infrastructure, Health
Selnica, Podravje region, (SI)	ENERGAP	Municipality Selnica ob Dravi, Regional Development Agency of Podravje Region,	1	Identification of risks in the region, evaluate the vulnerability and to map potentially risky areas.	Heavy precipitation and gravitational hazards and landslides;	Infrastructure (mainly roads, drinking water supply, houses)
			2	Greening the public spaces for reducing the temperature during the heat waves;	Heat Waves, Heavy Precipitation	Health of citizens, tourism
Genoa (IT)	Municipality of Genoa	IRE Liguria	1	Research of hazard related to windstorms, seastorms, heat/cold waves in order to produce hazard maps.	Windstorms, Seastorms, Heatwaves, Cold Waves	Urban Infrastructure; Health; Tourism
			2	High resolution wind model in the urban area	Windstorms	UI, Tourism, Health;

Fig.1

3. Report about Pilot Plans

Answers were collected in an Online Questionnaire

Region 1 | Grenoble-Alpes Métropole

Pilot Location: Grenoble-Alpes Métropole

Pilot Coordinator: Grenoble-Alpes Métropole

Pilot Support: AURA-EE, IRMa and municipalities

Pilot Plan a

Describe the first pilot action you plan to implement:

Animation of a working group with municipalities on the topic of municipal information documents on major risks through Risk and Resilience Community:

- Propose risk maps specific to each municipality
- Share experiences between municipalities with the help of the metropolis
- Develop content explaining the effects of climate change on risks on the Grenoble-Alpes Métropole territory
- Develop content explaining the role of local actors in crisis management
- Lead the workshop with municipalities



Field trip (30th June 2023) as part of the "pooling, risks and resilience" group

Which stakeholder were involved in the selection of actions?

The municipalities members of Grenoble-Alpes Métropole and AURA-EE

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Describe the process of selection in your region. Which steps did you take?

Identify municipalities that wished to update their municipal information document on major risks or want to share their experience on the same subject. All the interested municipalities can participate.

Describe the most important concerns of your stakeholder group, which led to the selection:

Inform their local population about risk on the territory.

Hazards:

All hazards identified on our territory: floods, rock falls, landslides, wildfires, flash floods...

Sectors:

Through this action we want to target populations exposed to natural risks, including urban infrastructure.

Adaption Measures:

The action will lead risk mitigation and climate adaptation measures.

How do you plan to implement the pilot action?

- Provide workshops spread over half days in which Grenoble-Alpes Métropole and the municipalities are involved.
- Exchange about their experiences and their needs. The first meeting took place the 25th of January, the next meeting will take place the following spring or autumn

Pilot Plan b

Describe the second pilot action you plan to implement:

Involve municipalities in a workshop with CimaStory tool:

- Introduce the tool to the municipalities
- Test the tool in order to: Build the action plan for a municipality and strengthen cooperation between different actors of the territory through a thematic approach: agriculture, industry, biodiversity.



Presentation of tools

Describe the process of selection in your region. Which steps did you take?

Identifying municipalities of Grenoble-Alpes Métropole interested by the tool

Which stakeholder were involved in the selection of actions?

The municipalities members of Grenoble-Alpes Métropole and AURA-EE

Describe the most important concerns of your stakeholder group, which led to the selection:

Developing the municipal territory by taking into account sectors other than urban planning, including biodiversity and risks. Mobilize citizens about the risks and climate change.

Sectors:

All topics: Forestry, urban infrastructure, tourism and health

Hazards:

Inform their local population about risk on the territory.

Adaption Measures:

Improvement of Civil Protection Plan, Improvement of wind monitoring and forecasting, reduction of preventive closures in favour of more specific actions.

How do you plan to implement the pilot action?

- Introduce different existing tools to involve the population on risk and climate change
- Set up half-day workshops during which participants use Climastory and provide feedbacks. The first workshop will take place the 9th of February.
- Improve the tool with the feedbacks.

Region 2 | Pusteria Valley

Pilot Coordinator: Eurac Research

Pilot Support: LAG Regional Management, Pusteria Valley as Observer

Pilot Plan a

Describe the first pilot action you plan to implement:

Within the first pilot action, the focus is on training foresters in the Pusteria Valley (South Tyrol) to enhance their knowledge and capabilities regarding future climate risks and adaptation measures in forestry. Due to the absence of a provincial forest owners' association, making direct training of forest owners challenging, a "train the trainers" approach was chosen.

Foresters, often serving as contacts for forest owners and thus as multipliers, will be directly trained. The main goal is to develop a profound understanding through combined theoretical and practical training on the topic of climate-adapted, artificial reforestation practices covering all related aspects, from site evaluation, and selection of suitable (and future-resilient) tree species, to planting methods, reforestation techniques, and maintenance measures. Especially given the previous focus on natural rejuvenation and the lack of activities in artificial reforestation amidst an acute need for action due to current calamities and the persistence of actions in the forest sector, the theme of the measure gains relevance.

The training includes a theoretical block addressing climate scenarios for the Puster Valley, identifying climate-related risks for the forestry sector, simulating future climatic conditions and potential compositions of tree species through the use of climate analogies, and information presented by experts on the topic of climate-adapted reforestation. In a significant practical part, the theoretical knowledge will be applied to demonstration areas.

The experiences from the training are to be conveyed directly to the actual target group of forest owners through an information event involving various stakeholders, and the results will be prepared in such a way that integration into existing training formats at the provincial level and thus maximum replication can be facilitated.

Which stakeholder were involved in the selection of actions?

At the beginning of the measure, a stakeholder mapping was conducted in the forestry sector. One interview with the head of one of the local sections of the Provincial Forestry Office was undertaken to frame the topics to be addressed in the first roundtable. During the first roundtable to identify adaptive capacity needs, 11 stakeholders participated in the sectorial group work, covering a broad range of interests, including hunting associations, farmer representatives, forestry officials, and disaster protection services, in order to be able to identify gaps in current forest management.

For the development of the concept of the measure, stakeholders were involved again to create a targeted and practical-relevant measure based on input from previous workshops. Key participants were the directors of the local forestry offices in Brunico and Monguelfo, covering the largest geographical part of the pilot region and contributing essential expertise. After initial content alignments, the higher provincial levels were involved in creating a design, which enables a potential replication at the provincial level. The highest-ranking provincial forestry official, the office for forest planning, and a representative of the forestry nurseries were involved, crucial for the success of the measure and building knowledge for future challenges in plant provision and training material for the practical part of the measure.

Internal and external experts with experience in geographically similar regions (e.g., from the higher technical school in Southeast Switzerland or the Bavarian LWF) were consulted to guarantee the practical feasibility of the theory and, in particular, the practical parts, benefiting from experiences in neighbouring regions. At the concept development stage, stakeholders primarily from the forestry sector were involved, focusing on developing a training measure for foresters. Later on, in disseminating the results through information events or replication in existing formats, the range of stakeholders will be expanded again to include relevant parties such as farmer representatives and officials from the nature conservation office or hunting association, and thus provide forest owners with the broadest possible range of information for climate adapting their forests.

Describe the process of selection in your region. Which steps did you take?

The process of selection was and is composed of the following steps:

1. Understanding the local context via a desktop analysis by PP
2. Consistency of risk assessment via a desktop analysis by PP and observer
3. Risk identification and evaluation via a desktop analysis by PP and Observer as well as expert interviews with the Provincial Director of Forestry management,
4. Stakeholder Mapping and Identification of CA measures in policies: desktop analysis by the PP, expert interview in point 3
5. Participatory Assessment of Needs and Vulnerabilities Related to Adaptation Capacity via one Roundtable with stakeholders, feedback from stakeholders after the roundtable, analysis by PP and Observer
6. Identification of CA tool: PP and observer based on results and feedback of roundtable
7. Co-designing of CA tools: PP and observer with key stakeholders (concept note and then detailed content and planning) The selection process for the pilot action therefore began with a comprehensive analysis of climatic conditions and risks in the Pusteria Valley region, which included evaluating climate scenarios, identifying specific risks for the forestry sector, and discussing potential adaptation strategies, inter alia in an expert interview with the director of the provincial forestry department. In the mentioned stakeholder Workshop, knowledge gaps, weaknesses and respective adaptation needs were surveyed, on the basis of which the need for measures in the area of knowledge enhancement in the area of climate-adapted forest management emerged. After developing a respective rough design of the measure, it was discussed with representatives of the local forest inspectorates, where the thematic focus on reforestation crystallized and the most important stakeholders for implementing the pilot action were thereby brought on board. By involving other forest-related stakeholders as well as the highest administrative provincial level, not only the thematic focus, but also the process and output format could have been agreed on, to ensure the highest possible replication and application even beyond the local implementation in the pilot region.

The development of the training measure therefore followed an iterative process, incorporating feedback from experts and local foresters into the planning. The decision to focus the training on climate-adapted reforestation practices was made based on the identified climate risks and the need to enhance forest resilience.

Describe the most important concerns of your stakeholder group, which led to the selection:

In previous years and decades, provincial activities in reforestation primarily focused on natural rejuvenation. Artificial rejuvenation was not considered a significant topic in forestry training due to the back then limited necessity to fall back on this approach. However, recent years have seen a significant increase in calamity events, prompting a reevaluation. The need to rapidly reforest large, damaged areas and growing concerns about the initial and future impacts of climate change underscored the need to make forests in the Pusteria Valley more resilient to future climatic changes and intervene accordingly timely. These concerns emerged especially against the background of the spruce, the by far dominating tree species in the valley, being under serious threat by increasing temperatures and changing precipitation patterns, with potentially large areas left not adapted to future climatic conditions.

The stakeholders agreed on a proactive approach to enhance forestry's adaptability, leading to the conclusion that specific, artificial reforestations should be employed to create forest communities resilient to future climatic conditions. They recognized the current window of opportunity induced by big calamity events and the necessity to act proactively today to provide climate-adapted forest ecosystems. Moreover, did the emergence of private initiatives for reforestation raise concerns about maladaptation due to the

potential planting of non-site-specific and insufficiently climate-resilient tree species. Training foresters, the primary contacts for forest owners and key multipliers in the forestry sector, aims to equip them with the necessary knowledge, ensuring the scientific integrity of these activities.

Hazards:

'Main hazards: gravitational hazards, heavy precipitation, temperature increase, drought periods

The pilot action addresses specific climate hazards like altered precipitation patterns, temperature increases, extreme weather events with respective gravitational hazards, and a rise in pest infestation and diseases, all significantly impacting forestry. It specifically tackles the long-term dangers of rising temperatures and changing precipitation distributions (including droughts) by early identification and planting of site-adapted and climate-resilient tree species.

Sectors:

Forestry is the primary focus of this measure, but adjacent sectors such as agriculture, tourism, nature conservation, spatial planning, and civil protection are indirectly influenced by improved reforestation practices and increased forest resilience, stemming from the diverse utility and protective functions that vital and intact forests provide. Without a respective adaptation of forest management, these functions might not be provided in a sufficient manner under changing climate conditions.

Adaption Measures:

The training will address adaptation measures like selecting climate-resilient, site-adapted tree species in case of necessary reforestation, improved planting techniques, and management strategies that enhance the forests' adaptability and resilience to climate change. By educating foresters, they can then act as multipliers for forest owners, who are then in the end responsible for implementing respective adaptation measures.

How do you plan to implement the pilot action?

After identifying adaptation needs, elaborating a rough design of the pilot action, discussing it with stakeholders and finally agreeing on the general approach, there will be ongoing meetings with the forest stakeholders in the detailed planning phase, where questions about the specific contents, roles and sequence of the measure will be defined. The concrete implementation of the (due to a high number of participants in total potentially 2) training modules with its theoretical and practical part is scheduled for the end of September/beginning of October 2024, especially due to new knowledge about the positive impact of plantings in autumn. Dissemination of the contents via an informative event and the development of replicable material is planned for winter 2024/spring 2025.

Pilot Plan b

Describe the second pilot action you plan to implement:

The ADAPTNOW project's second pilot action is a roadmap for enhancing climate change adaptation in the tourism sector of the Pusteria Valley. This action involves a seminar and a workshop designed to bridge knowledge gaps between local tourism stakeholders and climate adaptation experts. The focus is on

identifying the specific climate risks facing the region, exploring best practices in adaptation measures, and adapting and integrating these into the local context. The action includes a theoretical block addressing climate scenarios for the Puster Valley, identifying climate-related risks for the tourism sector, and information presented by experts on the topic of climate-adapted tourism. During the second module, an interactive workshop, the stakeholders will be guided to detail and adapt the adaptation measures to the main tourism destinations of the Pusteria Valley. Compilation of the knowledge and experiences will be then conveyed in the form of a roadmap, with the intention to transfer or integrate it into existing thematic tools and initiatives.



Describe the process of selection in your region. Which steps did you take?

The process of selection was and is composed of the following steps:

1. Understanding local context: desktop analysis by the PP
2. Consistency of risk assessment: desktop analysis by PP and Observer
3. Risk identification and evaluation: desktop analysis by PP and Observer, expert interviews with the Provincial Director of Forestry management, the District director of the Provincial Association of Hoteliers, the director of a local Ski Resort and related Tourist Association.
4. Stakeholder Mapping and Identification of CA measures in policies: desktop analysis by the PP, expert interview in point 3.
5. Participatory Assessment of Needs and Vulnerabilities Related to Adaptation Capacity: one Roundtable with stakeholders, feedback from stakeholders after the roundtable, analysis by PP and Observer
6. Identification of CA tools: PP and observer based on results and feedback of roundtable
7. Co-designing of CA tools: PP and observer with key stakeholders (concept note and then detailed content and planning with an online meeting)

Which stakeholder were involved in the selection of actions?

At the beginning of the work, a stakeholder mapping was conducted for the tourism sector. Two interviews (one with the head of the local sections of the Provincial Association of Hoteliers and one with the head of one big ski resort in the area, also a member of the Provincial Association of South Tyrolean Tourism Organizations) were undertaken to frame the topics to be addressed in the first roundtable. During the first workshop to identify adaptive capacity and needs, in total 13 stakeholders participated in the sectorial group work, covering the Provincial Tourism Destination Management Association, the Provincial Association of South Tyrolean Tourism Organizations, the local section of the Provincial Association of Hoteliers (including the Youth section), ski resorts, local tourism associations, the representatives of three local Municipalities. Involving a diverse array of stakeholders, the selection process for the pilot action brought together local and provincial tourism actors and climate adaptation experts. This inclusive approach ensured that the pilot action would address the multifaceted nature of climate adaptation within the tourism sector, taking into consideration the perspectives and needs of those directly involved in tourism activities (including safety) in Pusteria Valley. For the development of the concept of the measure, stakeholders were consulted again in an online meeting in February 2024 with the aim of creating a targeted and practical-relevant measure based on further input. Key participants were the Provincial Tourism Destination Management Association, local tourism associations, ski resorts, and the Provincial Agency for Civil Protection. As the main risks to be addressed, we identified the risk of a decrease in the attractiveness of winter tourism (including winter sports) due to rising temperatures and the risk of a reduction in human safety with regard to summer tourism due to extreme weather events and rising temperatures. Possible external experts (such as Alp/ S) and the logistics of the two modules were also discussed for developing both the theoretical module and the workshop to integrate best practices in the local tourism context.

Describe the most important concerns of your stakeholder group, which led to the selection:

The primary concerns that guided the selection of the pilot action for the tourism sector revolved around the little knowledge of climate-induced impacts and trends at the very local scale, e.g., future snow cover. The fear of change (also among young entrepreneurs) and reluctance to act was also an issue, due to the economic model based on short-term economic investments, which goes against the long-term impacts of climate change. There's a strong need to demonstrate the benefits of adaptation with a positive perspective, and to better define local impacts and clear adaptation measures, which can fit into the local context. It also emerged the need for better governance (sometimes not completely clear) and for initiatives that could foster collaboration across sectors, enhance knowledge sharing, and build capacity for long-term adaptation planning. These concerns underscored the urgency of developing a pilot action that not only addresses immediate climate risks but also contributes to the broader goal of sustainable development in the Pusteria Valley region.

Sectors:

The primary sector affected is tourism, including winter and summer outdoor recreational activities, hospitality services, and destination management. The action also indirectly influences local communities and landscape conservation efforts.

Hazards:

This pilot action targets hazards related to increased temperatures, extreme weather events, and the resulting impacts on natural attractions and tourism infrastructure. These hazards pose significant risks to the tourism sector's safety and attractiveness.

Adaption Measures:

Adaptation measures will encompass developing resilient tourism destinations, promoting safe practices among tourists and operators, and enhancing emergency preparedness and response to climate-related events.

How do you plan to implement the pilot action?

Implementation begins with detailed planning and coordination meetings in early 2024 to finalize workshop content and logistics. Recruitment of tourism stakeholders and experts for the workshops was followed, ensuring broad representation from across the sector. The two half-day modules are scheduled for (mid to end) November 2024, aiming to engage participants in interactive work and discussion. Post-workshop, a feedback and dissemination phase will help frame the adaptation roadmap, which will be rolled out to tourism stakeholders (with the intention of using existing online platforms and the support of the Provincial Association for Destinations Management) in late 2024/ spring 2025.

Region 3 | Municipality of Chivasso, Piedmont Region (IT)



Source of the picture: <https://www.comune.chivasso.to.it/it>.

Pilot Coordinator: iiSBE Italia R&D

Pilot Support:

- Metropolitan City of Turin (Department of territory, spatial planning, building planning and civil protection)
- Piedmont Region - Directorate strategic environmental assessment
- Piedmont Region - Health department
- Piedmont Region – Urban Planning department
- ASL (Local Health Authority) of the City of Turin
- Regional Epidemiological Centres - Piedmont Region
- Observatory of the epidemiological network in Piedmont Region
- “Parco del Po” authority - Polytechnic of Turin
- City of Turin - Environment department (City Climate Adaptation plan)

- Chamber of Architects in Turin (OAT)
- ARPA - Regional Agency for Environmental Protection
- UNCEM (National Union of Mountain Communities)

Pilot Plan a

Describe the first pilot action you plan to implement:

Support to the development of a “climate resilient” Master Plan, including adaptation measures to climate change.

The municipal administration of Chivasso is currently engaged in the revision of the city Master Plan dated 2004 and, in the meantime, it is also elaborating the SEA - Strategic Environmental Assessment (VAS – Valutazione Ambientale Strategica, as per Italian). The municipality wants to introduce, in those strategic documents, the risk assessment due to climate change and of course, the adaptation strategies and measures related to the risks identified. Furthermore, Chivasso has no Climate Change Adaptation Plan and is about to renew the Covenant of Mayors. The contemporaneity of all these circumstances has ensured the optimal basic condition for PP6 iiSBE Italia R&D, to develop a climate service strictly focused on Chivasso municipality needs, implementing a decision-making process to identify the optimal measures to increase the level of adaptation and resiliency of the municipality, to be included both in the Master Plan and within the SEA.

More precisely, the pilot action foresees a detailed identification and mapping process of the climate risks detected for the Municipality of Chivasso, namely, heatwaves, heavy rain and drought, including some adaptation measures at urban and micro-urban scale. Adaptation measures are related to the risks identified and to the two sectors selected for Chivasso: urban infrastructure and health. The mapping process foresees the use of GIS data, which will be implemented within different software in order to get detailed information about the areas in Chivasso with a greater heatwaves, heavy rain and drought risk. Moreover, in order to evaluate the effectiveness of the adaptation measures, the application of a set of indicators is expected. Quantitative indicators will be useful to assess the current situation of Chivasso and to understand the effectiveness of the adaptation and resilience measures to be applied within the territory in relation to the risks identified. Those indicators will be calculated through the use of a software, using GIS data and shape files. Furthermore, the use of quantitative indicators ensures the monitoring of the effectiveness of the adaptation measures over time.

The decision-making methodology will be replicable and transferable in any Italian municipal context.

Which stakeholder were involved in the selection of actions?



Picture taken during the second roundtable in Chivasso Municipality.

- Piedmont Region, which suggested the Municipality of Chivasso as potential municipality on which to work.
- The municipality of Chivasso, providing all the information on the state of art of the municipality.
- The architectural firm (Studio Paglia) in charge of the review of the Master Plan and of the elaboration of the Strategic Environmental Assessment.
- The ARPA - Regional Agency for Environmental Protection, providing very useful information related to the health sector.
- “Parco del Po” authority, providing very useful information related to the environmental and hydrological aspects.
- Anthemis Environment firm, which has elaborated an in-depth analysis of the ecosystem issues in Chivasso.

Describe the process of selection in your region. Which steps did you take?

The Piedmont Region directorate of the strategic environmental assessment suggested the Municipality of Chivasso as key case study on which to focus on to include adaptation measures, addressing the climate risks identified for the territory, within the City Master Plan and in the Strategic Environmental Assessment. The municipal administration of Chivasso is, indeed, currently engaged in the revision of the city Master Plan and in the elaboration of the SEA. The contemporaneity of all these circumstances has ensured the optimal basic condition for PP6 iiSBE Italia R&D to develop a climate service strictly focused on Chivasso municipality needs, implementing a decision-making process to identify the optimal measures to increase the level of adaptation and resiliency of the municipality, to be included both in the Master Plan and within the SEA. Steps followed are summarized below:

- Selection of Chivasso pilot thanks to the Piedmont Region suggestion.
- Meeting with the representatives of the municipal administration of Chivasso and with the architectural firm (Studio Paglia) in charge of the review of the Master Plan and of the elaboration of the Strategic Environmental Assessment.
- Analysis of the climate risks affecting Chivasso, considering the sectors identified.
- Meeting with the relevant stakeholders involved in the process for the climate risk assessment.

- Data collection of Chivasso (GISdata).
- Development of a decision-making process to identify the optimal measures to increase the level of adaptation and resiliency of the municipality, to be included both in the Master Plan and within the SEA.
- Identification of the quantitative indicators able to understand the effectiveness of the adaptation and resilience measures to be applied within the territory in relation to the risks identified and to monitor the effectiveness of them over time.

Describe the most important concerns of your stakeholder group, which led to the selection:

- Lack to date of an objective decision-making methodology able to verify the effectiveness of the adaptation and resilience measures for the territory.
- Difficulty in getting georeferenced data.
- Make the analysis period in line with the implementation time.
- Elaborate a decision-making methodology flexible so as to Make it replicable and transferable in any Italian municipal context.

Hazards:

Heatwaves represent a very dangerous climate hazard for the municipality of Chivasso. The areas with high heatwaves risk have been identified. During the last twenty years a high degree of drought has been highlighted. This phenomenon has generated the lowering of the aquifers and the agricultural sector has much suffered the consequences of the droughty climate. Heavy rains and floods represent a climate hazard affecting the municipality of Chivasso, indeed, Chivasso is located at the confluence of three rivers and in 1994 and in 2000, it has suffered two very important floods. Another major problem are the heavy rains the city is experiencing frequently during the last decade.

Sectors:

Urban infrastructure: the main UI taken into consideration for the Municipality of Chivasso are the railway, the main roads on the territory and the motorway that crosses near the municipality. The whole building sector has been taken into account.

Health: Piedmont Region, together with the Local Health Authority of the City of Turin, the Regional Agency for Environmental Protection, the Regional Epidemiological Centres and iiSBE Italia, are elaborating a "Urban Health Protocol" (a multi-criteria assessment tool useful to evaluate and measure how much the built environment at urban scale impacts on the health of inhabitants and how much it preserves them from climatic hazards). Chivasso will be the first pilot case of Piedmont Region Urban Health Protocol testing in late 2024.

Adaption Measures:

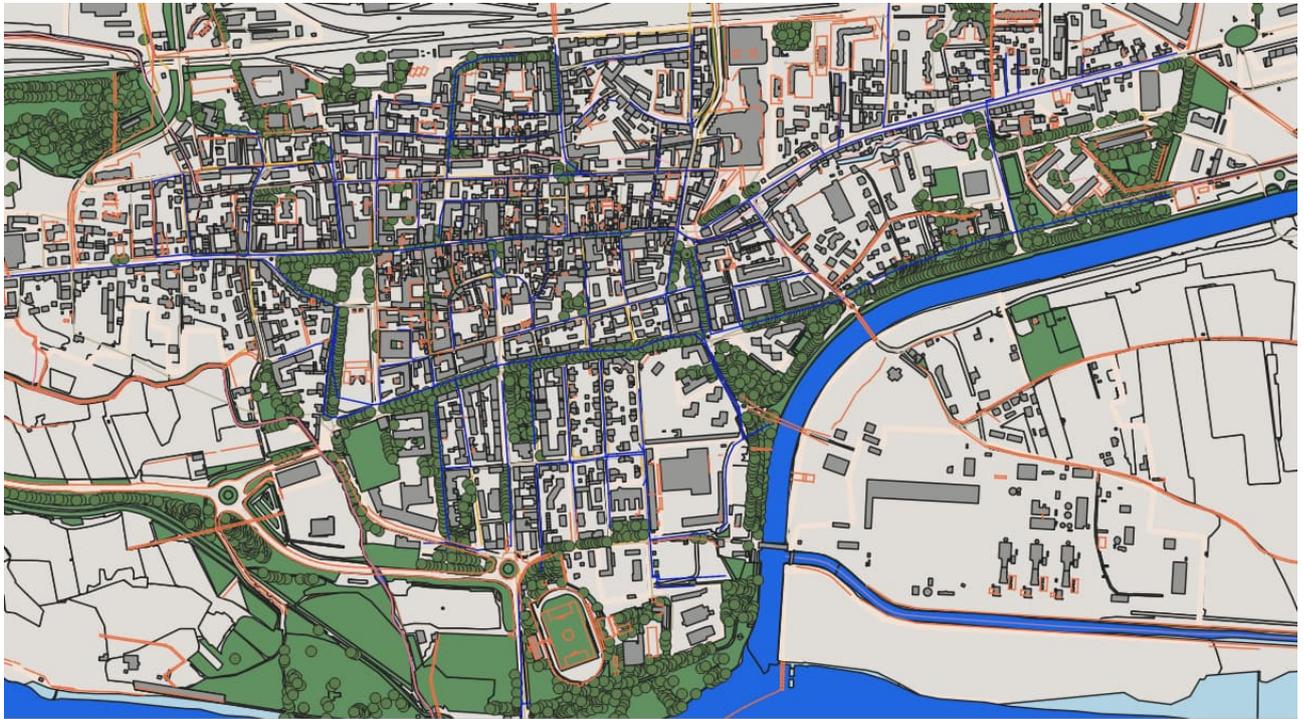
The adaptation measures related to the risks identified for Chivasso Municipality will be developed during the implementation phase (next period). Anyway, the pilot experience allows to develop a service for the development of "climate resilient" urban plans.

How do you plan to implement the pilot action?

The pilot action in Chivasso will be implemented thanks to a partnership among iiSBE, the representatives of the urban sector of the municipal administration of Chivasso and the architectural firm (Studio Paglia) in

charge of the review of the Master Plan and of the elaboration of the Strategic Environmental Assessment. The cooperation is fundamental to acquire data and get useful information about the territory.

The implementation of the pilot action runs through the analysis of climate risks, the elaboration of the optimal adaptation measures for the municipality of Chivasso and the application of the indicators useful to assess the effectiveness of that measures and their monitoring over time.



Extract of the Qgis project made for the Municipality of Chivasso.

Pilot Plan b

Describe the second pilot action you plan to implement:

Capacity building service:

Strengthening the skills of municipal planners and decision makers regarding the procedures for integrating adaptation measures into strategic planning.

The second pilot service to be developed for the Municipality of Chivasso, and for many other regional contexts, has as objective to strengthen the skills of the decision-makers, to working within the municipal context in planning activities and of the professionals, working a freelancer in the field of the urban planning, in relation to the procedures for the integration of the adaptation measures within the strategic planning process.

The climate and resilient urban planning is not a well-known and articulated procedure in Italy, furthermore, knowledge and competencies in this field are not so widespread thus, the capacity building service to be developed consists in the transfer of the decision-making methodology to identify the optimal measures to increase the level of adaptation and resiliency of the municipality.

The transfer also addresses the way to include those adaptation measures both in the Master Plan and within the SEA. The involvement of key stakeholders in the field of the planning activities is crucial; the transfer of knowledge and competences takes place through the involvement of stakeholders in the

implementation of the climate risk analysis activities and in the development of the adaptation measures. Workshops, round tables and training activities are the main engagement opportunities.

Describe the process of selection in your region. Which steps did you take?

The engagement of the stakeholders has been carried forward from the beginning of the analysis activities in Chivasso pilot. During the first part of the process, the representatives of the municipal administration of Chivasso and the architectural firm in charge of the review of the Master Plan and of the elaboration of the Strategic Environmental Assessment, have been the main key stakeholders involved in the capacity building service. Once the decision-making methodology process, which allows to identify the optimal adaptation measures, to be included both in the Master Plan and within the SEA, able to increase the level of adaptation and resiliency of the municipality, will be completed, workshops, round tables and training activities will be delivered to key stakeholder (decision-makers and professionals) in order to share knowledge in this field.



Picture taken during the first roundtable in Chivasso Municipality with the stakeholders.

Which stakeholder were involved in the selection of actions?

All the stakeholders involved to get data and information related to the Municipality of Chivasso, in particular:

- The municipality of Chivasso, providing all the information on the state of art of the municipality.
- The architectural firm (Studio Paglia) in charge of the review of the Master Plan and of the elaboration of the Strategic Environmental Assessment.
- Anthemis Environment firm, which has elaborated an in-depth analysis of the ecosystem issues in Chivasso.
- Piedmont Region, which suggested some methodological approach for heat island evaluation.

Describe the most important concerns of your stakeholder group, which led to the selection:

- General lack of knowledge about the climate and resilient urban planning.
- Very few and not encoded application of the inclusion of adaptation measures in Master Plan or SEA.

- The fact that, in almost all the cases, the vulnerability studies are not developed by municipal decision-makers (who are supposed to know the local context very well), on the contrary, external professionals are asked to make them.

Sectors:

Urban infrastructure: the main UI taken into consideration for the Municipality of Chivasso are the railway, the main roads on the territory and the motorway that crosses near the municipality. The whole building sector has been taken into account.

Health: Piedmont Region, together with the Local Health Authority of the City of Turin, the Regional Agency for Environmental Protection, the Regional Epidemiological Centres and iiSBE Italia, are elaborating a "Urban Health Protocol" (a multi-criteria assessment tool useful to evaluate and measure how much the built environment at urban scale impacts on the health of inhabitants and how much it preserves them from climatic hazards). Chivasso will be the first pilot case of Piedmont Region Urban Health Protocol testing in late 2024.

Hazards:

Heatwaves represent a very dangerous climate hazard for the municipality of Chivasso. The areas with high heatwaves risk have been identified.

During the last twenty years a high degree of drought has been highlighted. This phenomenon has generated the lowering of the aquifers and the agricultural sector has much suffered the consequences of the droughty climate.

Heavy rains and floods represent a climate hazard affecting the municipality of Chivasso, indeed, Chivasso is located at the confluence of three rivers and in 1994 and in 2000, it has suffered two very important floods. Another major problem are the heavy rains the city is experiencing frequently during the last decade.

Adaption Measures:

The adaptation measures related to the risks identified for Chivasso Municipality will be developed during the implementation phase (next period). Anyway, the pilot experience allows to develop a capacity building service strengthening the skills of municipal planners and decision makers regarding the procedures for integrating adaptation measures into strategic planning.

How do you plan to implement the pilot action?

The pilot action in Chivasso will be implemented thanks to a partnership among iiSBE, the representatives of the urban sector of the municipal administration of Chivasso and the architectural firm (Studio Paglia) in charge of the review of the Master Plan and of the elaboration of the Strategic Environmental Assessment. The service will be implemented through the local and regional organization of interactive workshop, training events, involvement in project meetings and in the activities related to the follow-up of the ADAPTNOW project.

Region 4 | City of Kempten

Pilot Coordinator: Energy and Environmental Centre Allgaeu (eza!)

Pilot Support: Energy and Environmental Centre Allgaeu (eza!)

Pilot Plan a

Describe the first pilot action you plan to implement:

Sun Detectives and Heat awareness raising campaign July 2024

To increase childrens awareness of heat waves and how to cope with them especially in overheated school buidlings a school project is conducted in two primary schools in Kempten. Both schools are already active as Klimaschule (a programme for transforming to climate neutral school operation). Several temperature measurements are conducted by the pupils over a 3 months period and data is then evaluated to get an impression on the heat vulnerability of the school building. Based on the results actions for climate adaptation are recommended (shading, ventilation,...). In July several actions shall be implemented in the city of Kempten to raise awareness of heat coping mechanisms among wider public (mobile greening of heat islands in the city, installation of drinking fountains, info-points on climate adaptation in the city).

Which stakeholder were involved in the selection of actions?

Administration of the city of Kempten:

- Climate Change Manager,
- Urban Planning and Building Department
- Working group on Climate Adaptation

Describe the process of selection in your region. Which steps did you take?

- Priorization of measures listed in the climate adaptation strategy by the climate adaptation working group;
- Development of specific actions related to these topics;
- Presentation of this collection of possible actions to the city administration and discussion with responsible persons;
- Final selection by the city administration.

Describe the most important concerns of your stakeholder group, which led to the selection:

More frequent heat waves and coping with overheating in the city

Hazards:

Heatwaves, Heavy Rain

Sectors:

Urban Infrastructure, Health

Adaption Measures:

Adaptation in school buildings (shading, ventilation,...), awareness raising among the pupils, greening of the city and adaptation in private households

How do you plan to implement the pilot action?

- Informing teachers on details of the project;
- Conduct measurements from March to June 2024;
- Evaluate results in summer 24;
- Information Campaign with various actions in July 2024;
- Exchange about their experiences and their needs;
- The first meeting took place the 25th of January, the next meeting will take place the following spring or autumn;

Pilot Plan b

Describe the second pilot action you plan to implement:

Model project for facade greening in cooperation with university of Stuttgart and Fraunhofer Institute, funding proposal for research project with measurements of microclimatic effects and rainwater usage. Proposed is the backside wall of the city-theatre in the city centre which is exposed towards the south.

Describe the process of selection in your region. Which steps did you take?

- Priorization of measures listed in the climate adaptation strategy by the climate adaptation working group;
- Development of specific actions related to these topics;
- Presentation of this collection of possible actions to the city administration and discussion with responsible persons;
- Final selection by the city administration.

Which stakeholder were involved in the selection of actions?:

Administration of the city of Kempten:

- Climate Change Manager,
- Urban Planning and Building Department
- Working group on Climate Adaptation

Describe the most important concerns of your stakeholder group, which led to the selection:

- Priorization of measures listed in the climate adaptation strategy by the climate adaptation working groups;
- Development of specific actions related to these topics;
- Presentation of this collection of possible actions to the city administration and discussion with responsible persons;
- Final selection by the city administration

Sectors:

More frequent heat waves and coping with overheating in the city, loss of biodiversity with intensifying global warming;

Hazards:

Heatwaves, Drought, Loss of Biodiversity

Adaption Measures:

Awareness raising among the citizens, greening of the city and adaptation in private households;

How do you plan to implement the pilot action?

- Identify possible building in 2024;
- Facade of a municipal building (likely municipal theatre);
- Find agreement with Uni Stuttgart on the collaboration;
- Set up funding proposal;
- Implementation likely 2025

Region 5 | Plan B Region



Pilot Coordinator: Energy Institute Vorarlberg (EIV)

Pilot Support: Energy Institute Vorarlberg (EIV)

Pilot Plan a

Describe the first pilot action you plan to implement:

Our region consists of seven municipalities: Bregenz, Hard, Lauterach, Lustenau, Kennelbach, Schwarzach and Wolfurt. Since 2020, we have been a KLAR! Region. This means we are participating in a federal program that supports activities in the area of climate change adaptation. The coordination group meets three to four times a year. It consists of municipal employees, political decision-makers and, if necessary, experts.

In this group, the desire arose to take a closer look at possible natural hazards resulting from the intensification of climate change. So we decided to take a closer look at various offers. In the end, we opted for the Austrian precautionary check for natural hazards in climate change. This check deals with general natural hazards caused by climate change, hydrological and gravitational natural hazards. Two auditors come to the region to carry out the check. Implementation will be in fall 2024.

Describe the process of selection in your region. Which steps did you take?

- Identify the problem
- Analyse different offers
- Decide which offer fits best

Which stakeholder were involved in the selection of actions?

The existing coordination group, consisting of municipal employees and representatives, made the decision. We have been in contact with various engineering firms that carry out the precautionary check.

Describe the most important concerns of your stakeholder group, which led to the selection:

Fear of major damage to the infrastructure

Sectors:

More frequent heavy precipitation, weakened forest due to drought and heat

Hazards:

Heatwaves, Drought, Loss of Biodiversity

Adaption Measures:

Raising awareness among political decision-makers

How do you plan to implement the pilot action?

Implementation in fall 2024, study report, develop new measures

Pilot Plan b

Describe the second pilot action you plan to implement:

In March 2024 we started the implementation of the project "Sun Detectives". This project aims on overheating in schools. We contacted all primary and secondary schools within our region. In the end there are six school participating, with 18 classes. In the KLAR! Region Walgau also 26 groups or classes are involved, so we will work with 44 classes and about 700 pupils. This region already participated in the testing in the year 2023.

The content of the project is overheating and managing raising temperatures. The participating teachers got teaching and training material. Each pupil got one thermometer and perls that react to UV-radiation. The idea is that the pupils do the temperature measures on the 21st of each month between March and June. This can be +/- some days, but it has to be a sunny day. Additional to the temperature measures the teacher describes the classroom in a form. At the end, this data is analysed by the EIV and the schools and staff of the municipality receive recommendations for action. These can be improvements to the shading, improved settings on the ventilation system, greening measures, as well as tips for improved night-time cooling.



Branded Thermometer for all pupil

Which stakeholder were involved in the selection of actions?

This project was presented to the community representatives and they were enthusiastic about it.

Describe the process of selection in your region. Which steps did you take?

We were in contact with the school of our region because of another project and so it was easy to get in touch with the schools again. They were happy with the new offer.

Describe the most important concerns of your stakeholder group, which led to the selection:

More frequent heat waves and coping with overheating in the city

Hazards:

Heatwaves

Sectors:

Urban Infrastructure, Health

Adaption Measures:

Adaptation in school buildings (shading, ventilation,..), awareness raising among the pupils, greening of the city and adaptation in private households

How do you plan to implement the pilot action?

- Informing teachers on details of the project;
- Conduct measurements from March to June 2024;
- Evaluate results in summer 24;
- Information Campaign with various actions in July 2024;
- Exchange about their experiences and their needs;

Region 6 | Pilot Selnica, Podravje region, Slovenia

Pilot Coordinator: Energy and Climate Agency of Podravje (ENERGAP)

Pilot Support: Municipality Selnica ob Dravi, Regional Development Agency of Podravje Region,

Pilot Plan a

Describe the first pilot action you plan to implement:

First pilot action was to identify risks in the region, evaluate the vulnerability and to map potentially risky areas.



Which stakeholder were involved in the selection of actions?

Energy and Climate Agency of Podravje and Local Civil Protection Group.

Describe the process of selection in your region. Which steps did you take?

Slovenia and its municipalities have very few activities in adaptation. Therefore our pilot was selected to develop a sort of guideline for municipalities how to start working on adaptation actions, whom to involve and how to frame and prepare the strategy and action plans for adaptation.

Very important issue is involving the stakeholders that could be involved in different steps of planning and implementing activities. Important stakeholders are national authorities and institutions that will cooperate because they are legally responsible for the adaptation policies.

Describe the most important concerns of your stakeholder group, which led to the selection:

The biggest concern is that Slovenia has no national framework, strategy or action plan. Because Slovenia has no regional level (only local ones) it is difficult to develop good local framework because it is very depended on regional contexts and national framework. Also there are no natural solution based concepts developed yet.

Hazards:

Heavy precipitation and gravitational hazards and landslides;

Sectors:

Infrastructure (mainly roads, drinking water supply, houses)

Adaption Measures:

Mainly to organisational measures

- Mapping the risk areas,
- How to organise the work to be prepared and resilient;
- How to alarm people;
- Also educational and information activities will be implemented;
- Some pilot cases for maintaining and renovating the infrastructure will be prepared using natura based solutions if possible (roads and water streams).

How do you plan to implement the pilot action?

We have already started in 2023 with first activities to involve stakeholders, prepare strategy and action plans, inform and educate people, plan organisational measures.

Pilot Plan b

Describe the second pilot action you plan to implement:

Greening the public spaces for reducing the temperature during the heat waves



Describe the process of selection in your region. Which steps did you take?

Selnica is rural municipality and has a lot of green areas so the heatwaves are problematic only in built areas in the municipal centre (public space, market). Therefore the place is not suitable to use (to seat or rest or even walk) in summers because it is only beton areas, no trees, cars everywhere. The action will also include the adaption measure for heavy precipitation (as geer areas are more resilient to it then beton).

Which stakeholder were involved in the selection of actions?:

National authority for cultural heritage protection and specialist for green areas planning, citizens, companies in the municipal centre that will be influenced because of car free space planning.

Describe the most important concerns of your stakeholder group, which led to the selection:

Not enough money to implement because it is not only tree and grass planting but also the adaptation of rain drainage and watering system as well as working with authority for cultural heritage protection that do not understand the climate change adaption measures in built areas.

Sectors:

Health of citizens, tourism

Hazards:

Heat Waves, Heavy Precipitation

Adaption Measures:

To have green areas with trees, bushes, grass and other plants to make shades

How do you plan to implement the pilot action?

We will plan and prepare or documentation needed (building permission, etc) and try to find financial sources. It has already started in 2023. The people are involved to be informed about the action as well as education activities to raise the awareness. The national authority for cultural heritage protection will be involved to understand the need for adaptation measures.

Region 7 | Genoa, Italy

Pilot Coordinator: Municipality of Genoa

Pilot Support: IRE Liguria

Pilot Plan a

Describe the first pilot action you plan to implement:

Partnership with the University of Genoa aimed at researching hazard related to windstorms, seastorms, heat/cold waves in order to produce hazard maps.

Which stakeholder were involved in the selection of actions?

Multiple public institutions from the Municipality of Genoa, Regional agency for health and a University Consortium.

Describe the process of selection in your region. Which steps did you take?

Our Civil Protection Plan lacked information about hazard and risk from windstorms, seastorms, heat/ cold waves and thus we needed to improve it.

Describe the most important concerns of your stakeholder group, which led to the selection:

The before mentioned hazards impact SH's daily work, citizens (traffic, road closures, green spaces fruiton, extreme heat), tourists (lack of information to visitors on weather-related risks).

Hazards:

Windstorms, Seastorms, Heatwaves, Cold Waves

Sectors:

Urban Infrastructure; Health; Tourism

Adaption Measures:

Updating of the Civil Protection Plan with new measures that will reduce risks from the three hazards considered. SH's proposals will be taken into account together with data from the new maps.

How do you plan to implement the pilot action?

The research for hazard maps is already ongoing; the update of Civil Protection Plan will begin at the end of the project, once we have all the technical information available.

Pilot Plan b

Describe the second pilot action you plan to implement:

A high resolution wind model in the urban area aimed at improving short-term forecasting and possibly reducing road and green spaces closures. New wind sensors will be installed in the areas that the hazard maps will show to be the windiest, in order to improve the real time monitoring, while the forecasting model will help us in evaluating the risk level in advance.

Describe the process of selection in your region. Which steps did you take?

Windstorms are especially problematic because to avoid damage when a strong wind is forecasted some roads and all parks and cemeteries close automatically, creating major disruptions. We need more effective and precise tools to avoid preventive closures.

Which stakeholder were involved in the selection of actions?

Same as for Pilot Action 1

Describe the most important concerns of your stakeholder group, which led to the selection:

Disruptions in their daily work, danger and inconvenience for citizens, economical losses.

Sectors:

UI, Tourism, Health

Hazards:

Windstorms

Adaption Measures:

Improvement of Civil Protection Plan, Improvement of wind monitoring and forecasting, Reduction of preventive closures in favour of more specific actions.

How do you plan to implement the pilot action?

The research for the high resolution wind model is already ongoing; the update of Civil Protection Plan will begin at the end of the project, once we have all the technical information available.