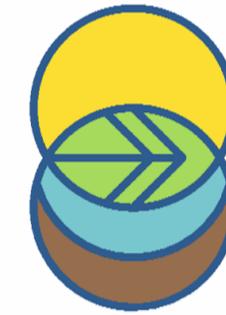

Cli.C.

BERGAMO!

Climate. Change.

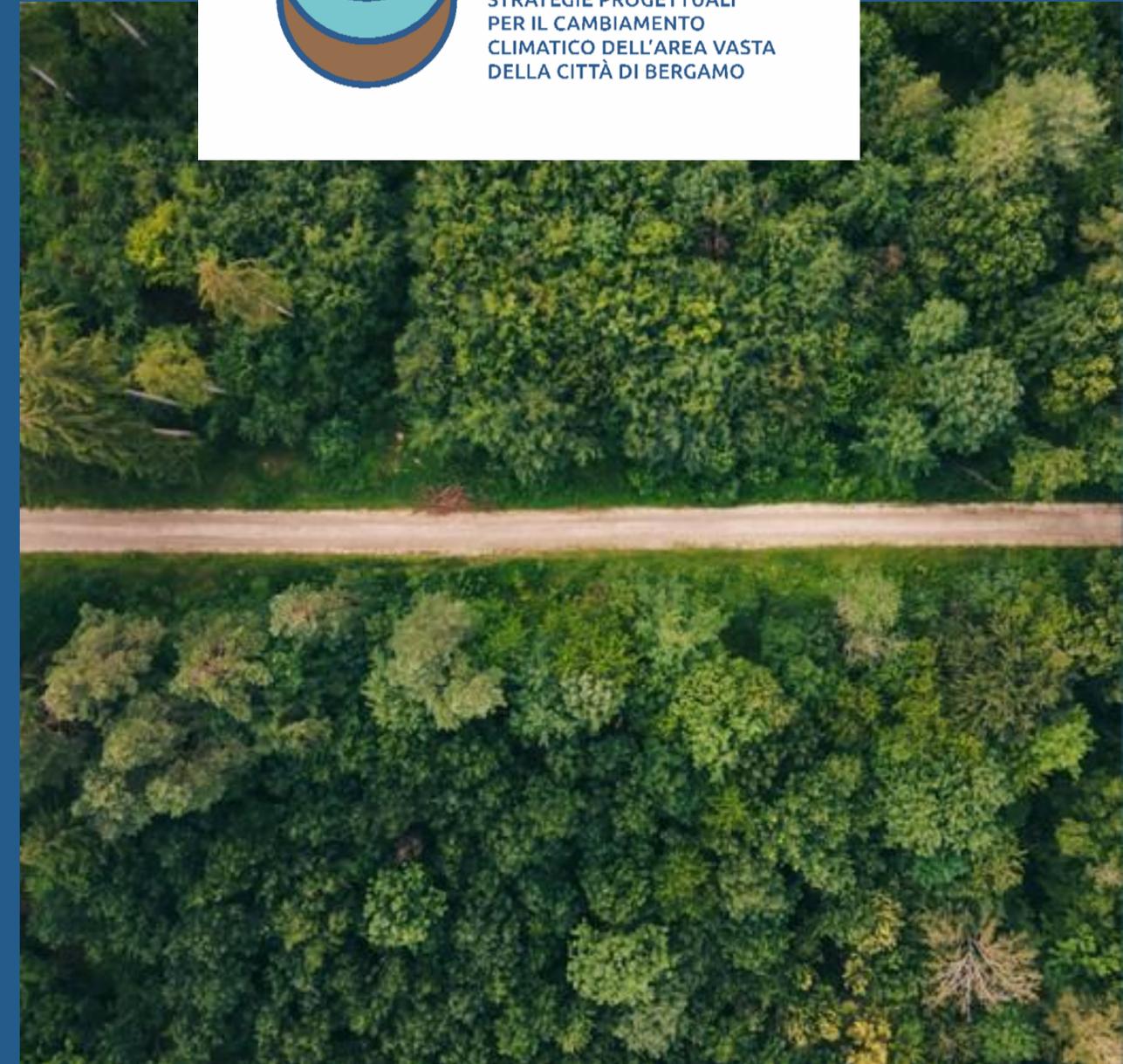
Bergamo!

DESIGN STRATEGIES FOR
CLIMATE CHANGE IN THE
WIDER AREA OF BERGAMO



cli.c.
BERGAMO!

STRATEGIE PROGETTUALI
PER IL CAMBIAMENTO
CLIMATICO DELL'AREA VASTA
DELLA CITTÀ DI BERGAMO



CLIMATE TRANSITION STRATEGY (CTS)

Framework and Partnership

Bergamo is located in northern Italy, in a highly urbanized context, about 50 km from Milan, and has about 120,000 inhabitants. The name of the project is Cli.C. Bergamo! (as the click of the mouse) stands for Climate Change Bergamo and was written and proposed by a partnership composed of the municipality of Bergamo, a regional park called Parco dei Colli, the environmental association named Legambiente and ERSAF - Regional Authority for Services to Agriculture and Forestry.

The project is funded by a banking foundation, called the Cariplo Foundation, and by the Lombardy Region and will begin next December until the end of 2025, although our desire is to extend its duration well beyond 2030.

Framework

ITALY



LOMBARDY



Partnership

PARTNER



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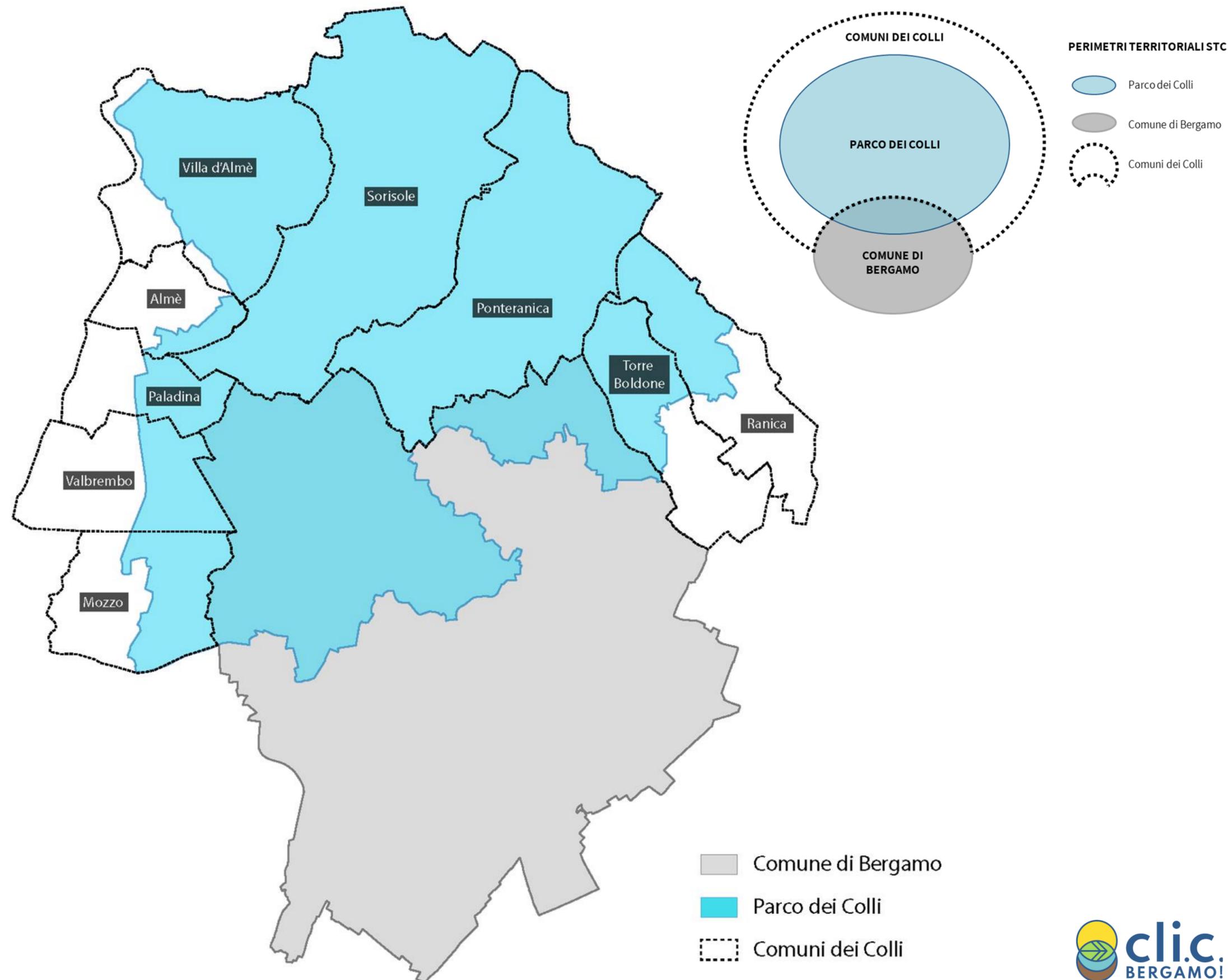
Fondazione
CARIPLO



ACTUATORS OF STRATEGY

In this map you can see the area affected by the climate transition strategy: the grey part represents the territory of the Municipality of Bergamo, the blue part represents the territory of Parco dei Colli which encloses the areas of 9 municipalities, some even totally included in the perimeter of the park, others only partially.

Our goal is that the whole area represented here, and not only the colored parts, will use the climate transition strategy thanks to a path of participation and collaboration with each and every Major.



CRITICALITIES AND SOLUTIONS

The first step was to identify the main problems present on the territory linked to climate change, like Flooding, Hydraulic hazards, Hydrogeological risks and Instability and landslides on the slopes. Fortunately, the phenomenon of the island of urban heat here in Bergamo is still rather contained.

Then, potential solutions were identified such as de-sealing and containment of soil consumption, multifunctional urban green, sustainable Urban Drainage Systems and generic sustainable actions, with the aim of increasing resilience and urban regeneration with the involvement of the citizens who would take an active role through an approach named “Bottom Up”.

CRITICALITIES

- Flooding
- Hydraulic hazard
- Hydrogeological risk
- Instability and landslides on the slopes

SOLUTIONS

- De-sealing and containment of soil consumption
- Multifunctional urban green
- Sustainable Urban Drainage Systems
- Natural Based Solutions

Plurithematic Transformative Approach

"Bottom Up" approach

with the active participation of informed, aware and responsible citizens

Resilience and Urban Regeneration Strategy



Launch Event of Cli.C Bergamo

21/10/2021

Fondazione
CARIPLO



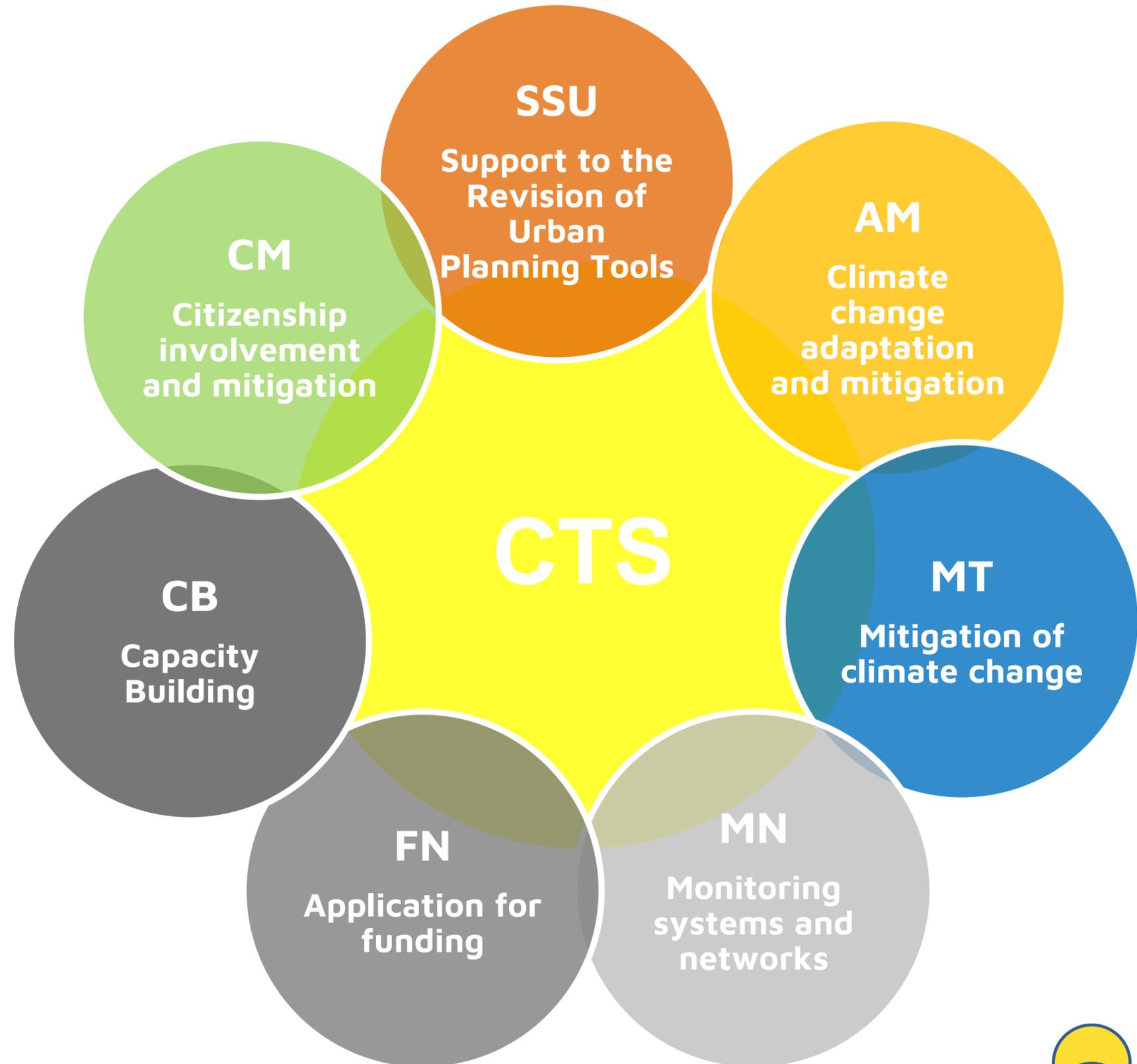
POLICY AREAS

The interventions included in the Strategy have been gathered into 7 macro-categories:

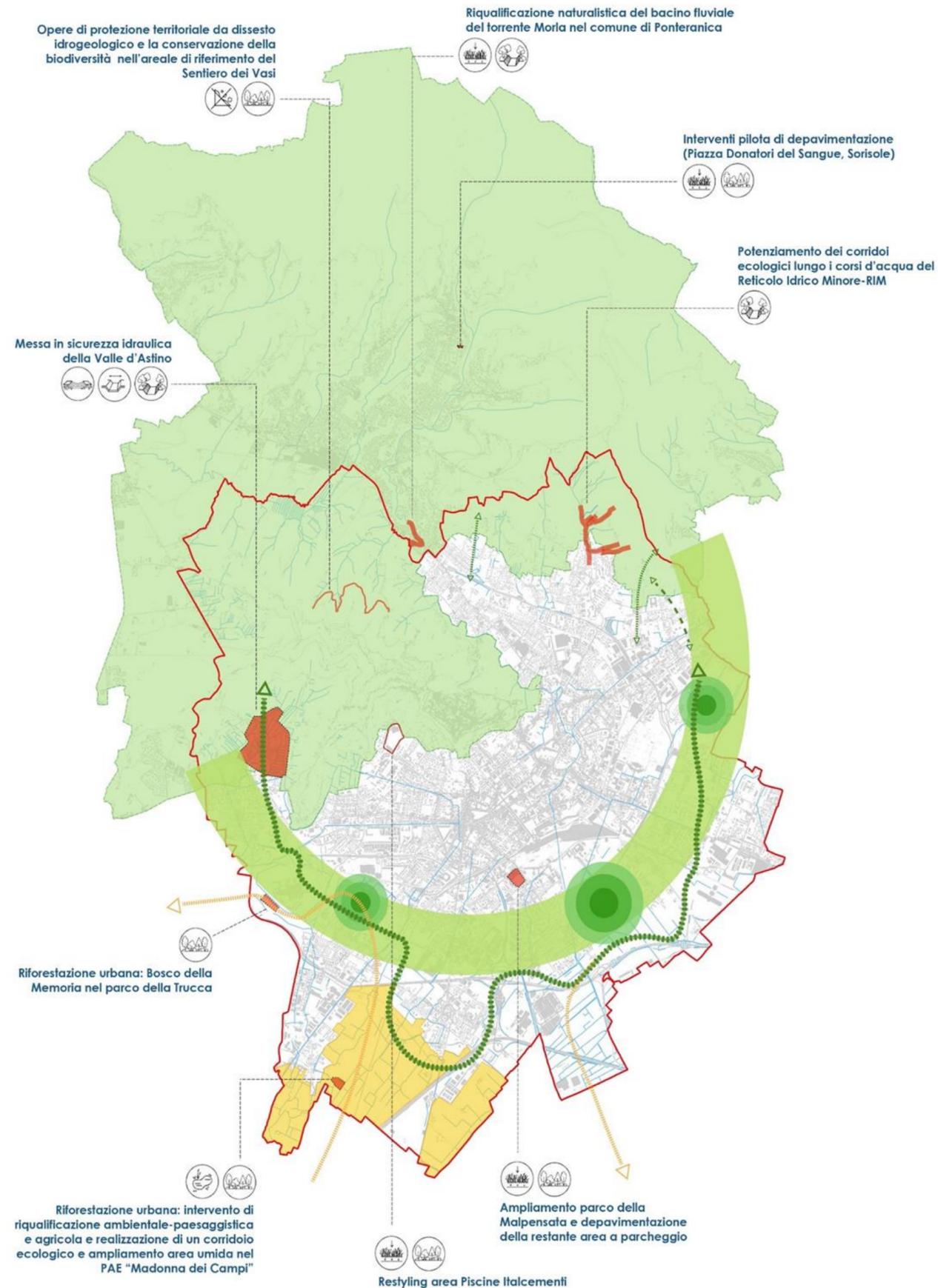
1. Support to the Revision of Urban Planning Tools
2. Adaptation and Mitigation of Climate Change
3. Mitigation of Climate Change
4. Monitoring Systems and Networks
5. Application for fundings
6. Capacity Building
7. Citizenship involvement and mitigation

For each action there have been identified in detail:

- The risk of climate change
- The timing of implementation
- The main and secondary objectives
- The expected results
- Indicators of direct and indirect outcomes



MAP OF INTERVENTIONS



-  Extension of wetland
-  Creation of vegetated banks
-  Creation of rolling tanks
-  Increase and/or new planting of plant species
-  Works of depavimentation
-  Protection against hydrogeological disturbance
-  Resealing of hives or torrents
-  Parco dei Colli
-  PAE «Madonna dei campi»
-  Progetto Cintura Verde

Support To The Revision of Urban Planning Tools

Revision of Urban Planning Tools - PGT

The Territory Planning Governance is the tool that defines the planning of the entire municipal territory and consists of three acts:

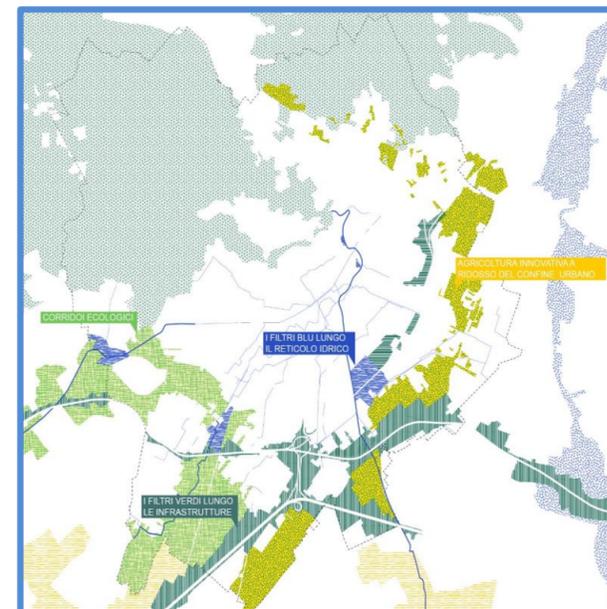
1. Document Plan
2. Services Plan
3. Rules Plan

Among these, the main one is the Document Plan, which identifies the objectives of development, improvement and conservation, crucially important for pursuing the economic, sustainable social development of the territory.

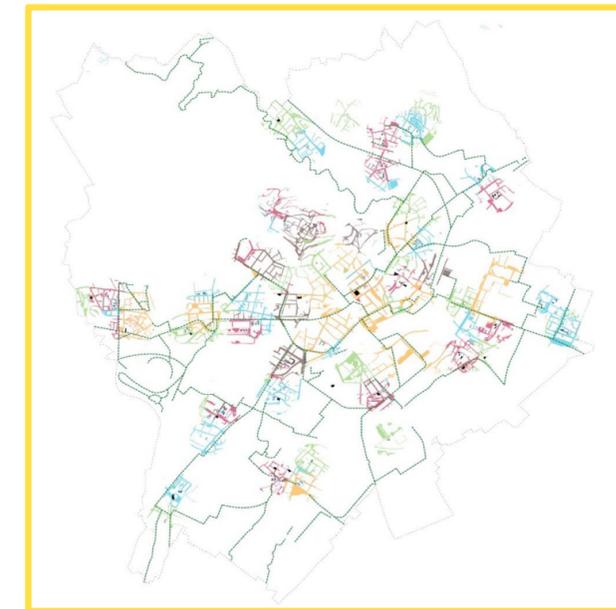
The review of the P.G.T. will follow three basic guidelines: attractiveness, inclusiveness and sustainability. The CTS will therefore contribute to the pursuit of the strategic direction of sustainability and the construction of a resilient city.



**ATTRACTIVE
BERGAMO**



**SUSTAINABLE
BERGAMO**



**INCLUSIVE
BERGAMO**

Support To The Revision of Urban Planning Tools

The specific objective of this action is the elaboration of the Action Plan for Sustainable Energy and Climate of the Municipality of Bergamo according to the new European guidelines which provide two central elements, namely the mitigation and adaptation to climate change, in addition to the transversal energy poverty. At the moment Bergamo has only elaborated the Action Plan for Sustainable Energy.

From SEAP- Sustainable Energy Action Plan – to SECAP - Energy and Climate Action Plan



Assessment of a decade of energy planning preparatory to a deepening of which actions of the SEAP review/ reinforce/ introduce in the drafting of the SEAP.

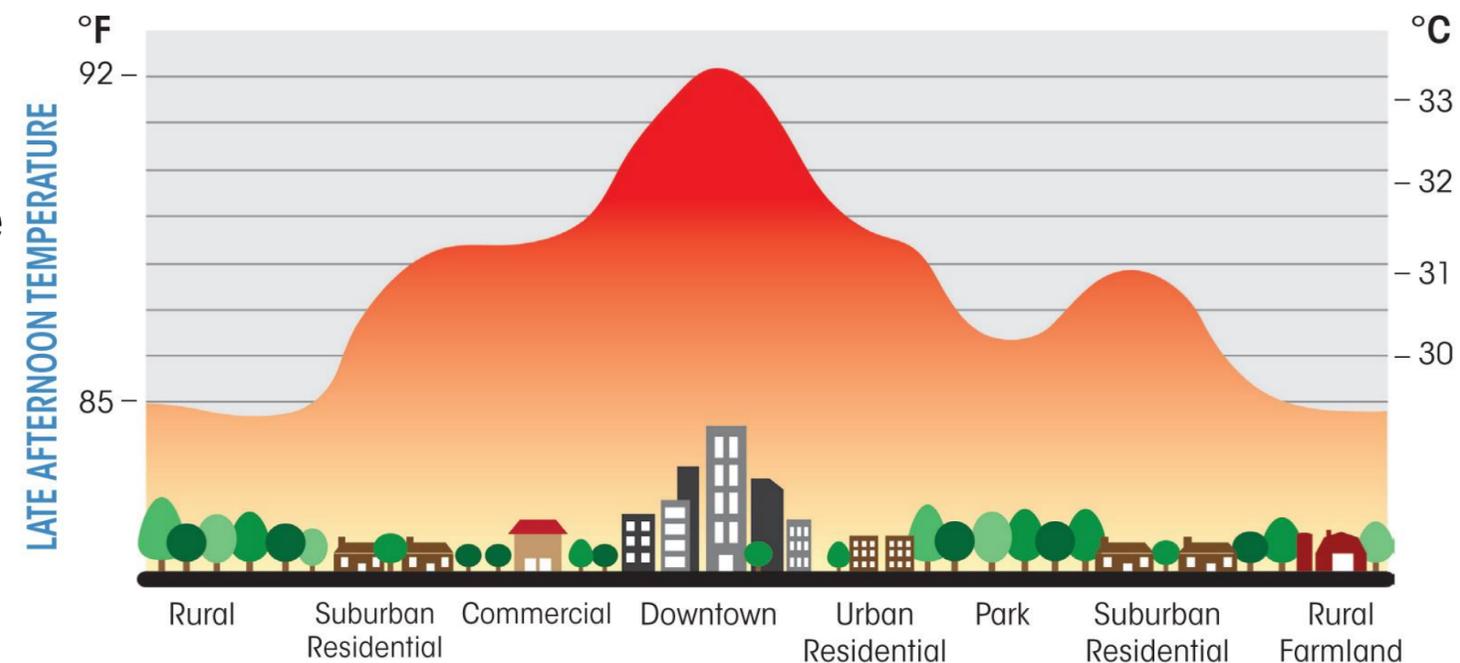
Support To The Revision of Urban Planning Tools

In order to boost our Strategy, it's necessary to identify and study the main climate threats and problems and to analyse the degree of exposure, the vulnerability and the capacity of adaptation of the territory of the wide area that encloses the Municipality of Bergamo and Parco dei Colli.

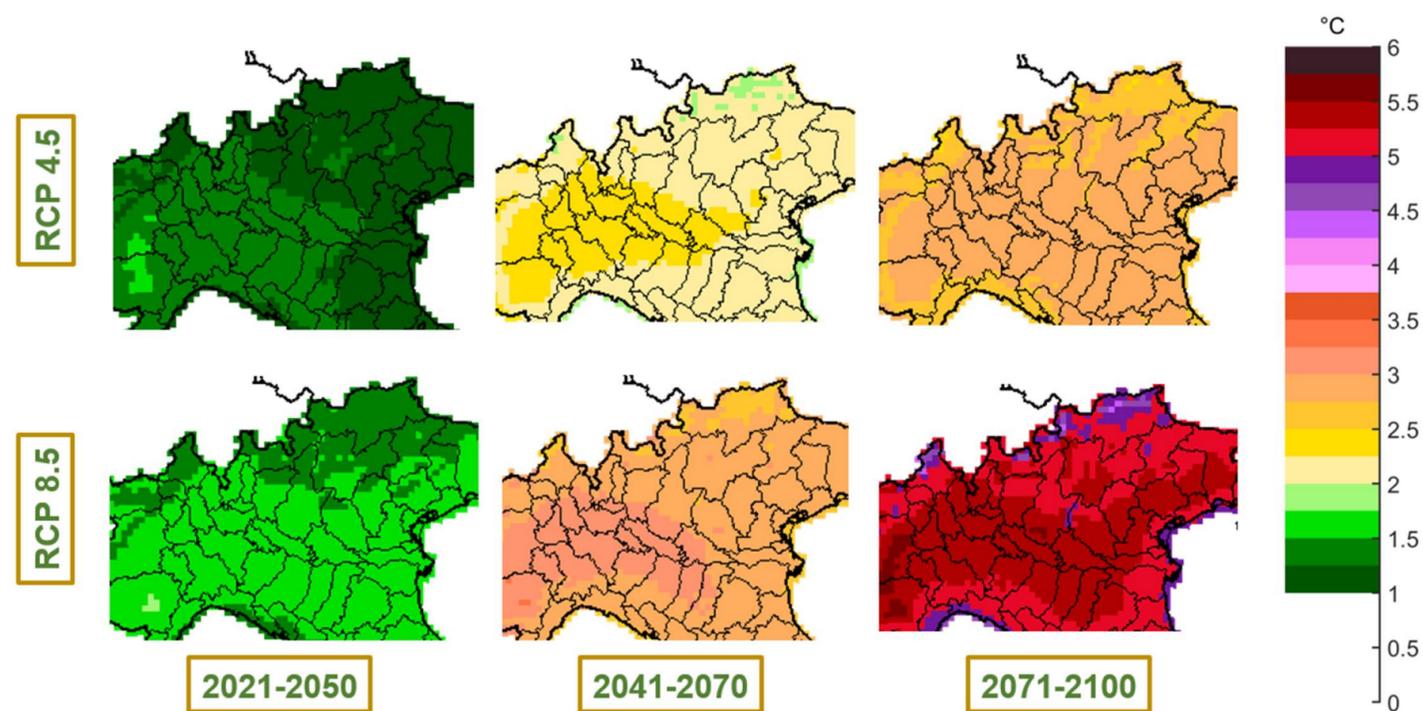
Mapping of the Climate Risk Index

Development of an easy-to-read Climate Risk Map to guide Climate Change adaptation and mitigation policies

Urban Heat Island



Average temperature future scenarios



Analysis of local climate variability

Climate Change Adaptation and Mitigation

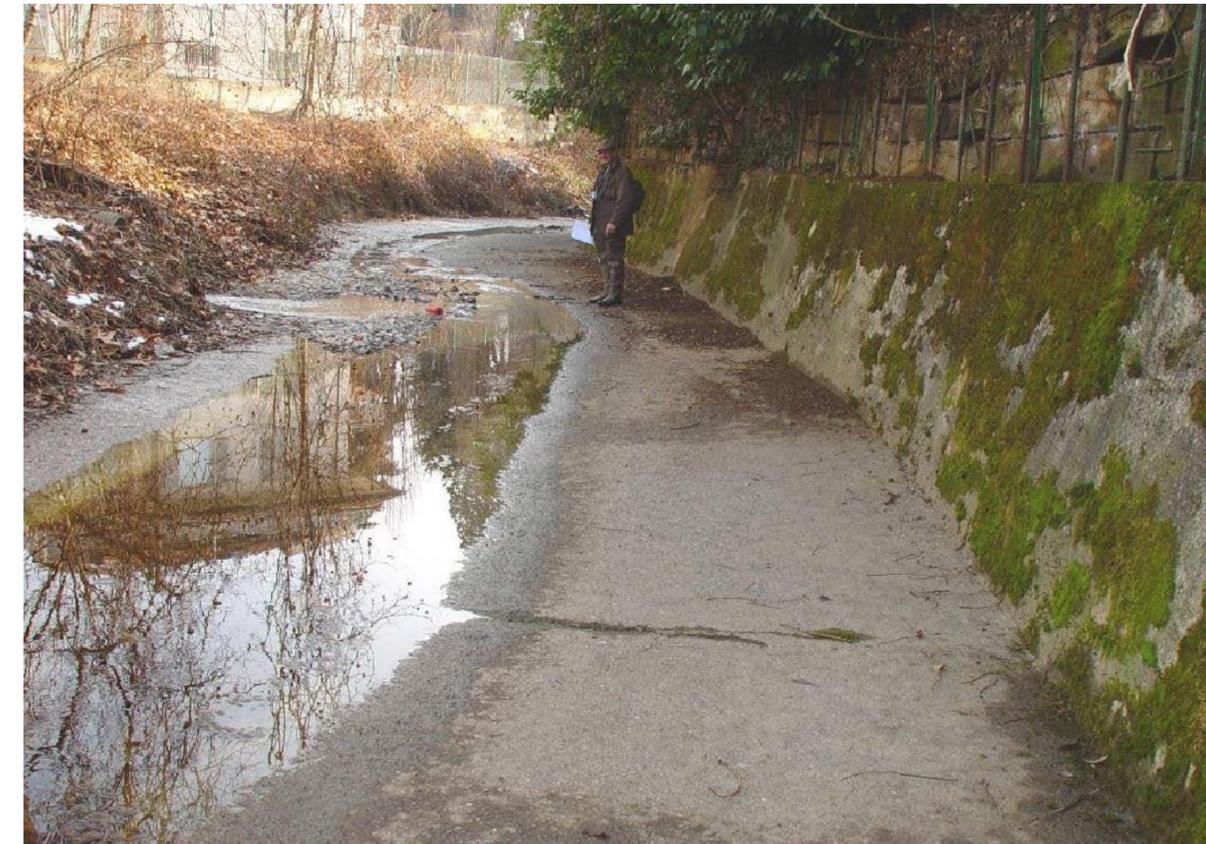
The stream Morla, one of the main waterways that crosses the city, has the bed cemented.

With this intervention some of the waterproof material on a stretch of the Morla will be removed and naturalistic engineering works will be carried out along side the harmonization of the surrounding landscape.

The goal is to extend this type of intervention throughout the whole length of the stream.

Naturalistic requalification of the river basin of the Morla Torrent

It's necessary to adopt a systemic approach based on the rearrangement of geological/hydrogeological and naturalistic/landscape components.



Renaturalisation of the river bed and banks based on the priority use of NBS techniques and a significant reduction of cemented parts.

The intervention will affect a stretch of approx. 500 m with an increase, where possible, of the vegetation of about 4,000 new native shrubs.

Climate Change Adaptation and Mitigation

This intervention consists in the expansion of an existing nearby park by cleaning up the contaminated areas and replacing the impermeable surfaces, currently a car-parking, and in the replacement of the paving of the remaining part of the car park with vegetal and draining systems

Pilot Project "Citizens, Chiefs of Urban Regeneration Project"

Extension of the Malpensata park and depavimentation of the remaining parking area.



Depavimentation of about 5,000 square meters of the area taking into account the limits defined by the Risk Analysis specific site.

The design of this intervention will see the activation of a participatory process functional to the involvement of the neighborhood.

Mitigation of Climate Change

The municipality of Bergamo will experience on its territory the birth of an energy community. This initiative involves the joining of a number of prosumers (entities that can act as producers and consumers), in particular willing to share renewable sources power plants

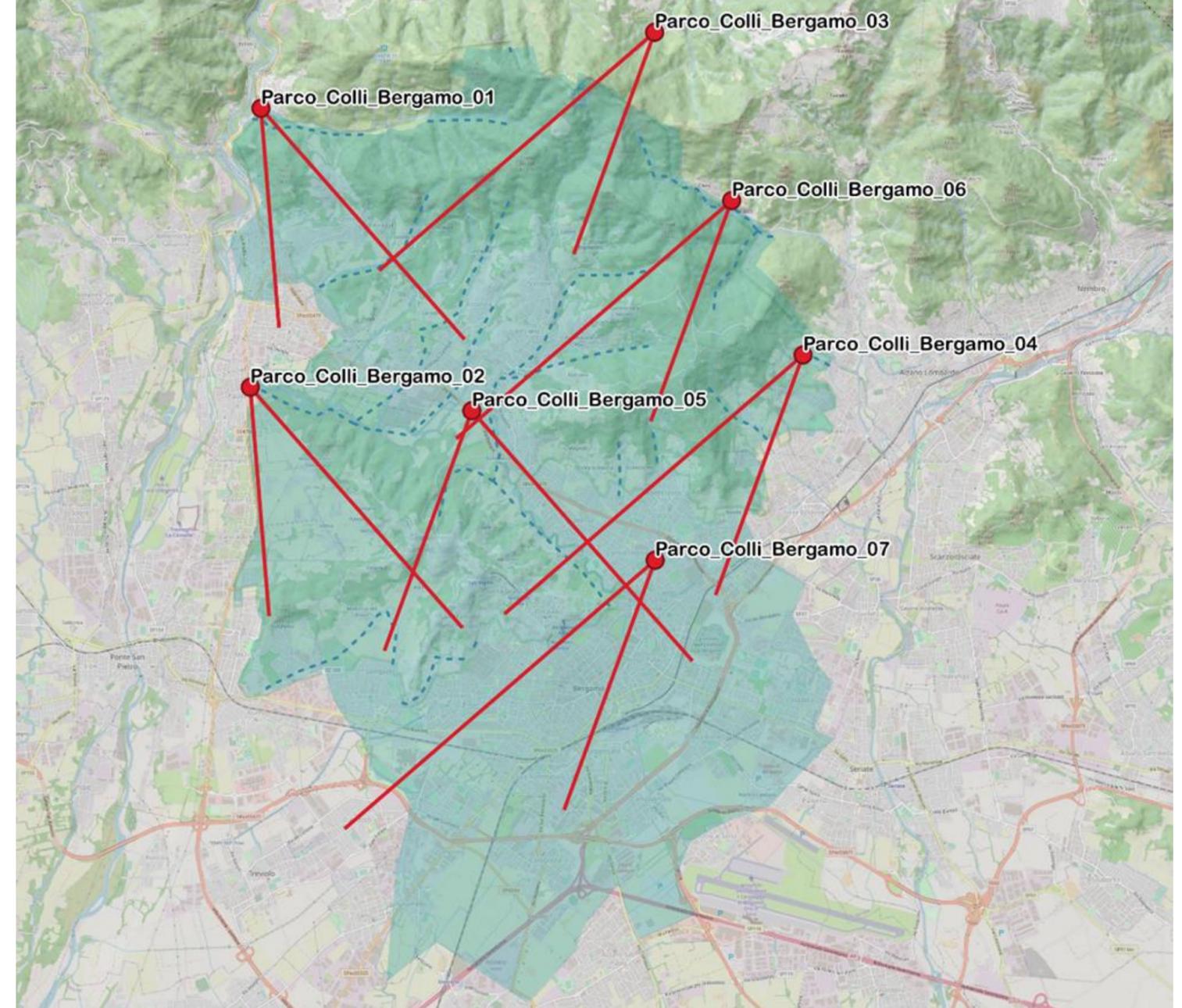
Energy Community

Promoting the creation of an energy community based on renewable sources that, depending on the location in which it will be born, maintains its specific characteristics, with the aim of self-producing and providing renewable energy at affordable prices to its members.



Networks For Weather-Climate Monitoring And Watercourses Screening

Realization of a monitoring network consisting of sensors for the survey of the main weather parameters, for the definition of the different local climate profiles present in the varied territory of the CTS and the forecast of eventual floods spreading in the Municipality of Bergamo and in the area of the Parco dei Colli during heavy rains.



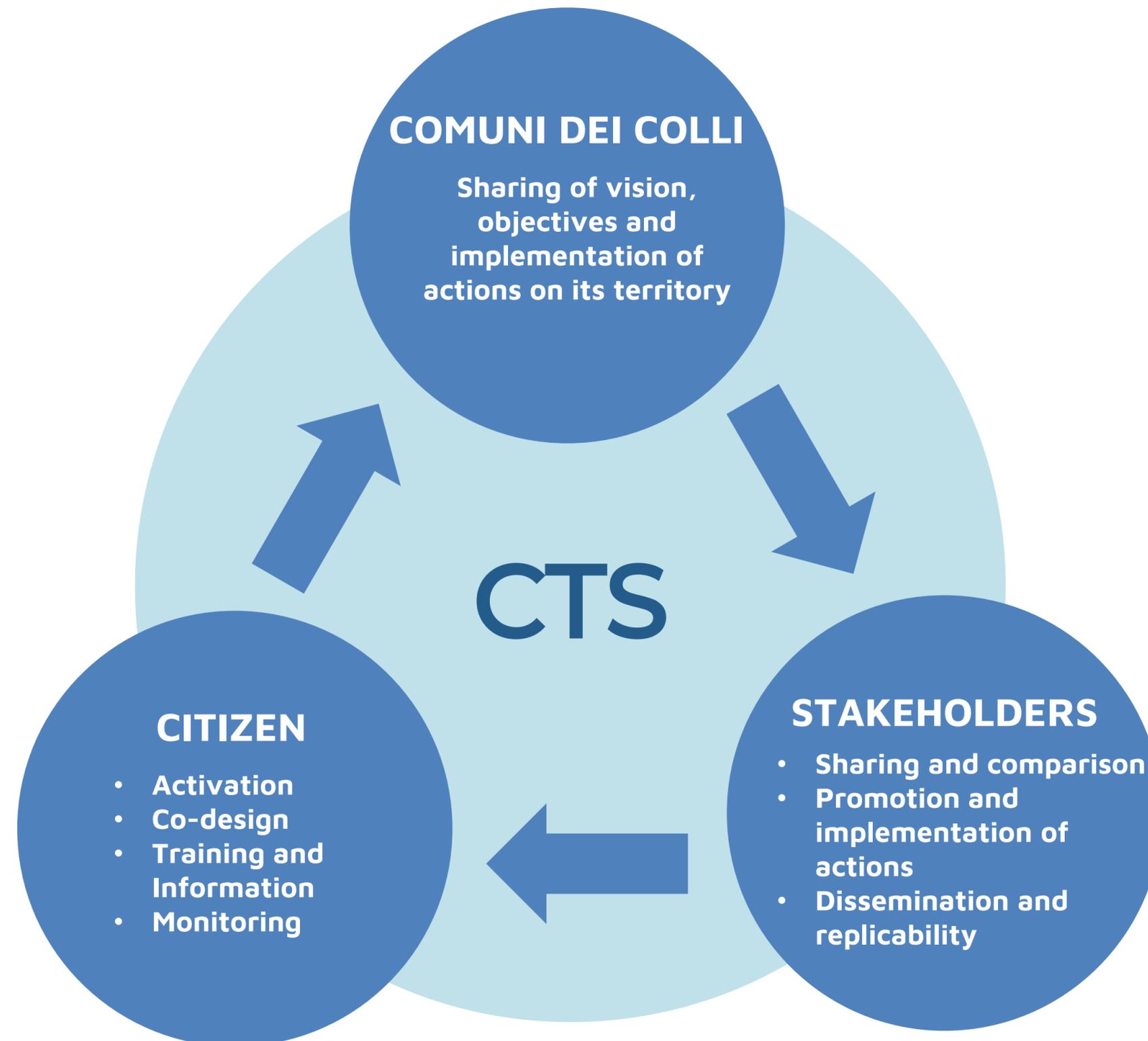
Possible location of pluviometric measuring stations (red circles) and territorial extension of the monitoring guidelines of the individual sensors (red lines).

Citizenship Involvement and Mitigation

A common aspect to all actions will be the communication to - and involvement of - the citizenship.

The Strategy will foster a constant dialogue between all the actors involved on several levels so that the good practices put in place can be brought also outside the involved territory.

Information and involvement of the “Comuni dei Colli”, citizens and stakeholders





THANK YOU!

PARTNER



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