

## **Tailored adaptation guidelines to climate change through new ways of representation**

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It is becoming increasingly evident that the planning process requires a substantial modification from the complexity of challenges (eg. climate change, natural hazard, refuges, etc.) that city and territory are facing. Therefore the planning process it is become more complex, for the heterogeneous disciplines that are involved, variety of big data used and for the complexity of issues on which it must working. In order to make the project “readable”, it became very important the communication during and after the process.

Urban realities that are introducing the issue of climate change in their urban policies are numerous, from New York, Chicago, Toronto, Stuttgart, Vienna, London up to medium-sized Italian cities such as Padua, Bologna and Venice. In many cases they have drawn up a voluntary “planning tools” until now rarely used.

This paper discuss on the project developed in partnership with the municipality of Padua (medium size city in north of Italy, more than 200.000 inhabitants).

The aim of the research is to define a theoretical and methodological framework for increase medium size cities resilience to Climate Change impact and making “readable” the process using “research by design” method. The research has been developed forwarding the two main steps: analysis and project.

In the first step we have been working more in an creative way, with a production of splitted static maps to make more understandable the data complexity of the innovative “vulnerability” analysis. This type of analysis can enrich and increase the level of the territorial information (using Lidar flight and ICT). The analysis is composed from sq.m. of vegetation, the height of the trees, the solar incidence, permeability of the soil, etc. (the information base required, in fact, is usually not produced for the drafting of cognitive framework of existing territorial government instruments and these informations are often not available at the municipal level). With these knowledges has been possible to design a vulnerability map needed to recognize the priority areas.

Then the project phase which includes: a “tailored” proposal of new actions, tools linked to new actions and monitoring. Thank to the vulnerability analysis has been created an abacus of solution (following this logic: vulnerability > goal > target > action) tailored for the project area for counteract the effect on heat island and extreme precipitations.

The challenge of creating this less conventional abacus, usually only written, was to find a new way of communicate all the adaptation actions and make it understandable, in order to be well used from decision and policy makers of the municipality.

Mainly the abacus was structured with a system of symbols representing action, and to each symbols some conceptual design action.

The main output of the project is the new guideline that basically has to help medium size municipality to develop their own adaptation plan.