



**Politecnico
di Torino**

Honors Thesis

Master of Science in Sustainable Architecture

Abstract

"Mitigation and adaptation to the climate change in the European middle-sized cities"

Analysis of the actions and policies undertaken in ten cities followed by a discussion with figures of experts in the areas of governance, planning and sustainable design, with reference to the Italian context, for an overview of potential and critical issues at national level.

Tutors

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December 2021

Medium-sized cities

The theme explored in the thesis work is about the mitigation and adaptation solutions to climate change referred of the European middle-size city.

It was decided to explore and analyze the situation of these cities because they were considered a "system" having a certain importance in the social and economic context of our continent.

This consideration was explored and legitimized during the development of the thesis through the identification of three characteristics of this type of city.

The first is that they are the *feature of spatial structure* of the European urban environment (ESPON, 2006). In Italy, specifically, emerges the issue of *polycentrism*.

The second is that they contain a large part of the European population, in fact the 56% lives in these territorial contexts (Zevi, ISPI, 2019).

The third relates to the territorial role that these cities play. In fact, they appear to be "*a productive and social backbone of the country system*" (Decaro-ANCI, 2020), having a role of "*functional and management node*" capable of conducting and promoting socio-economic development of the territories connected to them.

It is believed that these three characteristics can lead to a series of advantageous conditions for the experimentation and systematization of interventions aimed at environmental protection.

One of these relates to the identification and implementation of solutions that can be easily replicated in other contexts; another is to obtain an easier control and evaluation of the effects due to a smaller scale of application, if it is intended to systematize a certain type of intervention; a third relates to the potential great beneficial effects that such interventions would have, both in reference to the surrounding area and in global terms.

Case studies

Following the theoretical classification of this type of city, some trends and interventions undertaken by 10 European cities are analyzed by investigating the correlation between policies and sustainable development plans, intervention programs and solutions, to various scale, of mitigation and adaptation to climate change.

Specifically, interventions investigated refer to the themes, identified by the European Urban Agenda, of sustainable land use, adaptation to climate change and sustainable urban development.

Guidelines

In the last part of the thesis, some tools/documents that framed the two fundamental aspects that transpired from the interventions examined by the case studies are examined. The two aspect individuated are: *transcality*, i.e. planning considering the implications at different scales, and *multidisciplinarity*, i.e. planning taking into account of instances pertaining to different disciplinary fields.

Dialogues

In support of the analysis carried out in the first parts of the thesis, a series of dialogues are conducted with some interlocutors, belonging to different contexts.

For the first part, the figure identified are a researcher and counselor for the public administration and a local political decision-maker. By these interviews, indications on the state of policies concerning medium-sized cities and what are their critical aspects and their possible potentials are obtained.

In the part relating to the guidelines, figures belonging to the academic field and to the operational support to the design are identified for the interview. In this case, the role played by the technicians regarding sustainability urban development issue and how interventions could be articulated to improve adaptation and mitigation solutions in urban planning and design are investigated.

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