

# Summary

Climate Change Adaptation (CCA) has recently emerged as a key issue in global debate and the Paris Agreement (2015) highlighted the crucial role of cities and local governments in addressing climate-related impacts. Due to the cross-cutting nature of CCA, international organizations (e.g. United Nations, European Union) encourage its cross-sectoral integration into local planning frameworks – conceptualized in the notion of ‘mainstreaming’.

Local governments engaged in CCA planning are currently a minority, mostly large-sized cities, and the planning tools they use for tackling CCA are heterogeneous (e.g. comprehensive plans, master plans, CCA-dedicated plans, resilience strategies). In the European Union context, cities mostly employ the dedicated approach (i.e. CCA plans or CCA and mitigation joint plans) and this approach *de facto* frames CCA as a new sectoral issue.

Despite the different tools employed in CCA planning, there is still an implementation gap and these tools – especially the dedicated ones – are seldom integrated into the local planning frameworks. Furthermore, the role of science-based climate information in CCA mainstreaming as well as CCA co-production are the two main aspects in need of further investigation.

Exploring the different stages of policy-making processes and the Science-Policy interface, this research aims to address the mechanisms of CCA integration into local planning frameworks and implementation. These processes are analysed through the use of a theoretical lens, ‘mainstreaming’ – the core concept of this thesis – which provides a critical perspective for the examination of: i) science-based climate information and services that feed CCA planning and eventually affect CCA integration, and ii) dedicated planning tools and their impacts on CCA integration and implementation.

The research was carried out through an analytical framework, designed in accordance with literature review findings. The framework consists of a set of qualitative criteria aimed at assessing the credibility – reliability, accuracy, and

legitimacy – of climate information and services; the degree of CCA integration into local planning frameworks; and the relevance and consistency of CCA measures and monitoring systems. The analysis draws on a qualitative research approach with triangulation of secondary data analysis, in-depth semi-structured interviews, and participant observations.

The limited understanding of how CCA policies and plans are integrated into local planning frameworks in Southern Europe justifies the central focus area of the thesis, with Barcelona (ES) and Turin (IT) as main case studies. Both municipalities, respectively coastal large- and inland mid-sized cities, employ a dedicated planning approach, with a difference in experience (Barcelona can be classed as relatively mature, whereas Turin is a relative “newcomer”).

Results constitute a valuable indication for scholars and policy-makers. This thesis argues that what is actually mainstreamed into local planning frameworks is climate information which, as a consequence, should always be investigated when researching CCA planning and policy. Another important issue that arises relates to the consistency of CCA measures. In fact, the complexity and multi-risk nature of climate change require researching the inner conflicts among CCA measures, which can also cause disservices – research fields yet to be properly explored.

Based on the empirical findings, relevant attention should be given to intra-organisational coordination among key municipal departments; to the involvement of knowledgeable local stakeholders from the pre-planning phase; and the strategic use of CCA-dedicated planning tools.

Finally, this exploratory research provides valuable methodological and conceptual insights and paves the way for a better understanding of the joint application of co-production and mainstreaming concepts in CCA planning research.