

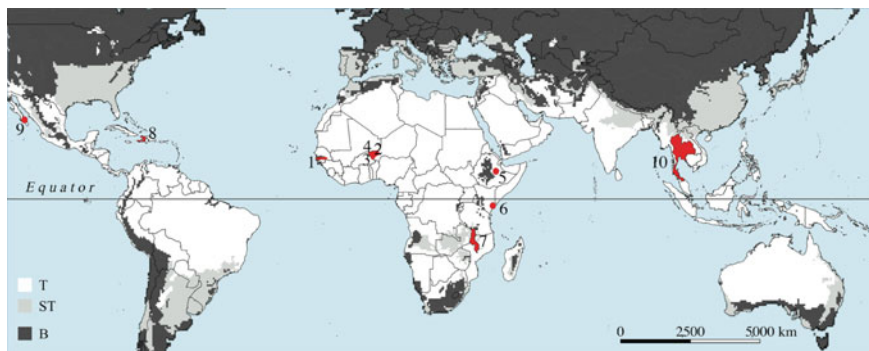
Preface

This book presents the most recent results of a research started at the end of 2011 in Africa South of the Sahara and then extended to the whole tropics. The focus of our work is climate planning. With this term, we mean all those plans to limit climate change (mitigation and sustainable action plans), to protect human settlements against its impacts (emergency, risk reduction, adaptation plans, and resilience strategies) and to pursue both the medium-term (municipal development plans) and long-term (comprehensive, general, and master plans) aims.

During these years, we have organized three UICCA—Urban Impact of Climate Change in Africa—conferences (Turin 2011, 2013, 2016) to share and discuss the first results of our work with other similar experiences, involving over one hundred researchers, various officials and local administrators, as well as numerous students.

A selection of the reports presented at the 3rd UICCA conference is provided here. The book tackles a topic which is going to be critical in the years to come: How to implement the 11th Sustainable Development Goal—SDG (2015). We are referring to the target which states “By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans toward inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for disaster risk reduction 2015–2030, holistic disaster risk management at all levels” (United Nations’ Sustainable Development Goal 11).

Today, the debate and literature on SDGs is focused on monitoring the achievement of the goals. The aim of our work, on the other hand, is to draw attention on how to reach the above-mentioned target of SDGs at 2030. And the reason lies in the fact the tools used so far to center the target lack efficiency and the cities which will most need to use them have little or no knowledge of them. Our work raises the matter of the quality of climate planning. And this looks at the analyses prior to planning, decision making for planning, and the innovation of climate measures. However, it also looks at transversal topics, such as IT systems and planning methods. For example, we focus on the transition from participated planning built upon traditional knowledge only, which still prevails in the Least Developed Countries (LCDs), to that which integrates this with technical-scientific knowledge, which is better suited to identifying the



Case studies investigated in the book: Casamance, Senegal (1), Tillaberi region, Niger (2), Gotheye (3) and Ouro Gueladjio (4), Arsi region, Ethiopia (5), Dar es Salaam, Tanzania (6), Malawi (7), Haiti (8), La Paz, Mexico (9), Thailand (10), Tropical (T), Subtropical (ST), Boreal (B) zones

nature of the climate change, and the expected impacts of adaptation and risk reduction measures.

The attention of the book is aimed at the tropical LDCs in that they contain the cities less able to limit the emissions responsible for climate change and to cope with the impacts of the latter but which, at the same time, will be the context in which the biggest transformations in human settlements will take place within the next 15 years.

The book has eighteen chapters which examine 10 case studies (see Figure). Chapter 1 (Tiepolo, Pezzoli, and Tarchiani) assesses the state of application of the 11th Sustainable Development Goal in the tropics and the prospects, the lines of research, and the challenges for renewing local planning to face climate change. There are two parts. Part I, centered on climatic monitoring and the assessment of the various components, is made up of eight chapters.

Chapter 2 (Sabatini) discusses some of the main issues to improve climate observation network planning, especially in remote and inhospitable regions with a focus on Niger and Nepal representing the two climatic extremes.

Chapter 3 (Bacci and Mouhaimouni) proposes a comparative analysis of the hazards between present and future, concentrating particularly on the extreme rainfall events and drought on the Western Niger.

Chapter 4 (Bacci) presents an agrometeorological analysis as a tool for characterizing the climatic risks to suit the rice-growing system in southern Senegal (Casamance).

Chapter 5 (Belcore, Calvo, Canessa, and Pezzoli) estimates vulnerability to climate change in 3 woredas of the Oromia region (Ethiopia), whereas data on vulnerability to drought are lacking.

Chapter 6 (Tiepolo and Bacci) presents a method for tracking climate change vulnerability in the 125 rural municipalities of Haiti using open data.

Chapter 7 (Demarchi, Cristofori, and Facello) presents an early warning system for urban Malawi integrating satellite-derived precipitation data and geospatial reference datasets.

Chapter 8 (Vignaroli) proposes a Web-based approach for early drought risk identification using freely available rainfall estimations and forecasts to strengthen the mechanism for the prevention and management of the food crisis in Sahel.

Chapter 9 (Franzetti, Bagliani, and Pezzoli) tackles the climatic characterization of Thailand.

Part II of this book also collects eight chapters which look mainly at decision-making tools for local climate planning and innovation in climatic measures.

Chapter 10 (Tiepolo) presents the state of climate planning in 338 large- and medium-sized cities in the tropics using the QCPI—Quality of Climate Planning Index.

Chapter 11 (Tiepolo and Braccio) presents a case of multirisk analysis and evaluation in rural Niger integrating local and scientific knowledge.

Chapter 12 (Fiorillo and Tarchiani) presents a simplified method for assessing flood hazard and related risks using open-access tools and data in a rural municipality in south Western Niger.

Chapter 13 (Faldi and Macchi) presents an application for forecasting and participatory backcasting methods for assessing urban people's vulnerability to water access in Dar es Salaam, Tanzania.

Chapter 14 (Emperador, Orozco Noriega, Ponte, and Vargas Moreno) presents a method for climate risk reduction mainstreaming at La Paz, Mexico.

Chapter 15 (Bechis) presents an innovative stove for limiting the use of wood as a fuel for cooking in Niger, using farming and forestry residues, estimating the potential impacts on renewable natural resources.

Chapter 16 (Di Marcantonio and Kayitakire) presents a review of the index-based insurance in Africa as a tool to reduce climatic risk at rural level.

Chapter 17 (Schultz and Adler) presents the climate vulnerability reduction credit system applied to rural Niger to assess the outputs of climate adaptation measures to reduce vulnerability to climate change.

Chapter 18 (Tiepolo, Pezzoli, and Tarchiani) gathers conclusions, indicates areas for future research, and supplies numerous recommendations for renewing local planning in the tropics to the main stakeholders.

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