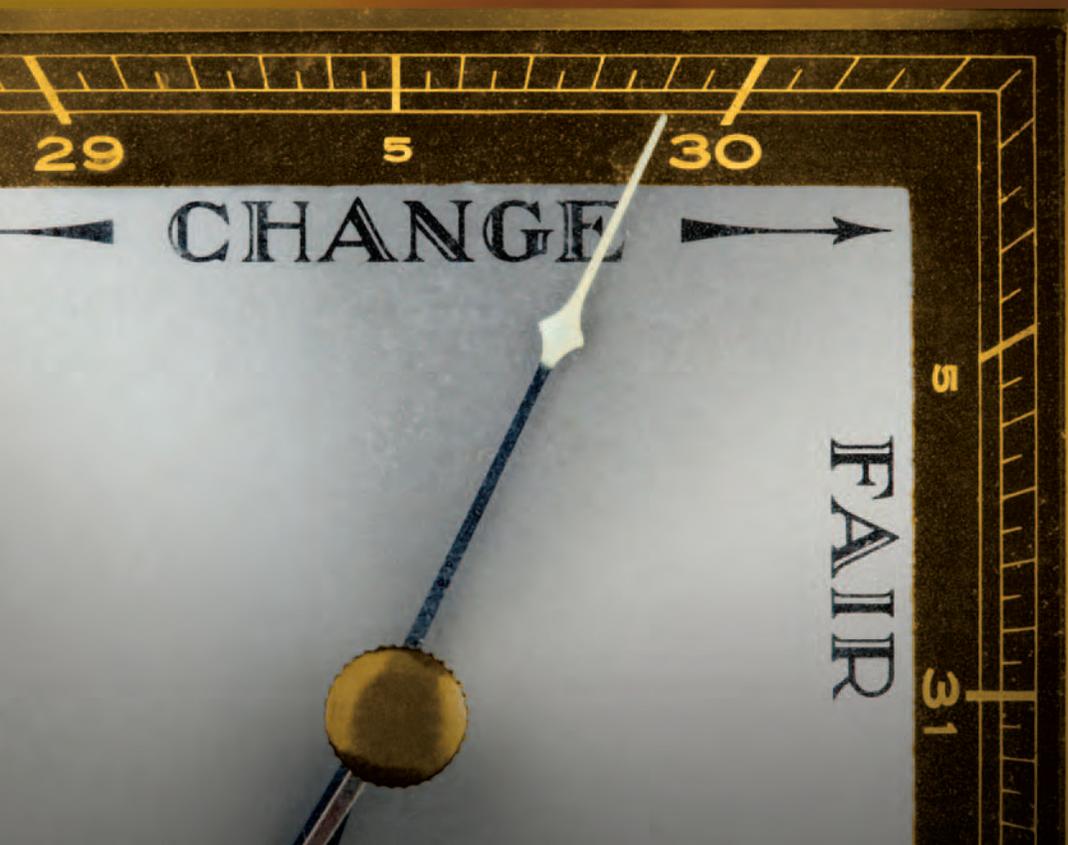




Formulating Climate Change Scenarios to Inform Climate-Resilient Development Strategies

A Guidebook for Practitioners





UNDP is the UN's global development network, advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. We are on the ground in 166 countries, working with them on their own solutions to global and national development challenges. As they develop local capacity, they draw on the people of UNDP and our wide range of partners.

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Acronyms and Abbreviations

AR4	(IPCC) Fourth Assessment Report
AR5	(IPCC) Fifth Assessment Report
CIMA	Argentine Research Center of the Sea and the Atmosphere
CRU	Climate Research Unit
DOE	(US) Department of Energy
ENSO	El Niño-Southern Oscillation
GCM	Global Climate Model/General Circulation Model
GHG	Greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
km	Kilometres
km ²	Square kilometres
LECRDS	Low-Emission Climate-Resilient Development Strategies
NCEP	(US) National Centers for Environmental Prediction
NCAR	(US) National Center for Atmospheric Research
NC	National Communications
RCM	Regional Climate Model
RCP	Representative Concentration Pathways
SNC	Second National Communication
SRES	Special Report on Emissions Scenarios
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
WRF	Weather Research and Forecasting Model

Formulating Climate Change Scenarios to Inform Climate-Resilient Development Strategies

A Guidebook for Practitioners

This guidebook is part of a series of manuals, guidebooks, and toolkits that draw upon the experience and information generated by UNDP's support for climate change adaptation and mitigation projects and National Communications to the United Nations Framework Convention on Climate Change (UNFCCC) in some 140 countries over the past decade. They are intended to enable project managers, UNDP Country Offices, and developing country government decision makers to acquaint themselves with a variety of methodologies most appropriate to their development contexts in support of the preparation of low-emission climate-resilient development strategies (LECRDs). In a flexible and non-prescriptive manner, they offer detailed step-by-step guidance for the identification of key stakeholders and the establishment of participatory planning and coordination frameworks; generation of climate change profiles and vulnerability scenarios; identification and prioritization of mitigation and adaptation options; assessment of financing requirements; and development of low-emission climate-resilient roadmaps for project development, policy instruments, and financial flows. This publication focuses on the formulation of climate-change scenarios as a tool to inform low-emission climate-resilient development strategies.

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Foreword

Climate change is a defining challenge of our time, and it is one of the most pressing threats to development today. The poorest and most vulnerable populations of the world are most likely to endure the harshest impacts and suffer disproportionately from the negative effects of climatic changes. In order to best serve the needs of the at-risk communities, we must address climate change through a development lens (and vice versa).

Addressing the possible impacts of climate change is proving to be entirely compatible with the pursuit of sustainable development and the achievement of the United Nations Millennium Development Goals. Our experience at UNDP over the past two decades indicates that the right mix of policies, skills, and incentives can influence behaviour and encourage investments in climate development-friendly activities. To facilitate this, UNDP enhances the capacity of developing countries to formulate, finance and implement national and sub-national low-emission climate-resilient plans that align climate management efforts with development goals and that promote synergies between development and climate finance.

A key task when formulating these plans is the development of climate scenarios. This is the topic of the present UNDP publication, *Formulating Climate Change Scenarios to Inform Climate-Resilient Development Strategies: A Guidebook for Practitioners*, which guides project managers and their team of experts in their efforts to assess the need for climate scenarios, identify existing constraints (due to financial, computing, workforce and scientific limitations), and evaluate and select various approaches to generate a range of prospective climate scenarios.

This guidebook builds on a large range of UNDP's ongoing initiatives to support adaptation to climate change and is part of a series of practical guidance documents and toolkits being developed to support the preparation of low-emission climate-resilient development strategies — LECRDS. This series is intended to empower decision makers to take action, and to prepare their territories to adapt, and hopefully thrive, under changing climatic conditions.



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