

# Contents

## Front Matter

Foreword .....	v
Preface .....	vii
Dedication .....	xi

## SPM

Summary for Policymakers .....	3
--------------------------------	---

## TS

Technical Summary .....	33
-------------------------	----

## Chapters

Chapter 1	Introduction .....	119
Chapter 2	Observations : Atmosphere and Surface .....	159
Chapter 3	Observations: Ocean .....	255
Chapter 4	Observations: Cryosphere .....	317
Chapter 5	Information from Paleoclimate Archives .....	383
Chapter 6	Carbon and Other Biogeochemical Cycles .....	465
Chapter 7	Clouds and Aerosols .....	571
Chapter 8	Anthropogenic and Natural Radiative Forcing .....	659
Chapter 9	Evaluation of Climate Models .....	741
Chapter 10	Detection and Attribution of Climate Change: from Global to Regional .....	867
Chapter 11	Near-term Climate Change: Projections and Predictability .....	953
Chapter 12	Long-term Climate Change: Projections, Commitments and Irreversibility .....	1029
Chapter 13	Sea Level Change .....	1137
Chapter 14	Climate Phenomena and their Relevance for Future Regional Climate Change .....	1217

## Annexes

Annex I	Atlas of Global and Regional Climate Projections .....	1311
Annex II	Climate System Scenario Tables .....	1395
Annex III	Glossary .....	1447
Annex IV	Acronyms .....	1467
Annex V	Contributors to the IPCC WGI Fifth Assessment Report .....	1477
Annex VI	Expert Reviewers of the IPCC WGI Fifth Assessment Report .....	1497
Index .....		1523



**T**he Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and the United Nations Environment Programme to provide an authoritative international statement of scientific understanding of climate change. The IPCC's periodic assessments of the causes, impacts and possible response strategies to climate change are the most comprehensive and up-to-date reports available on the subject, and form the standard reference for all concerned with climate change in academia, government and industry worldwide. Through three Working Groups, many hundreds of international experts assess climate change in this Fifth Assessment Report. The Report consists of three main volumes under the umbrella title *Climate Change 2013/2014*, all available from Cambridge University Press:

*Climate Change 2013 – The Physical Science Basis*

Working Group I Contribution to the Fifth Assessment Report of the IPCC

*Climate Change 2014 – Impacts, Adaptation and Vulnerability*

Working Group II Contribution to the Fifth Assessment Report of the IPCC

*Climate Change 2014 – Mitigation of Climate Change*

Working Group III Contribution to the Fifth Assessment Report of the IPCC

---

*Climate Change 2013 – The Physical Science Basis* is the most comprehensive and up-to-date scientific assessment of past, present and future climate change. The report provides:

- an authoritative and unbiased overview of the physical science basis of climate change
- a more extensive assessment of changes observed throughout the climate system than ever before, using the latest measurements covering the atmosphere, land surface, oceans, snow, ice and frozen ground, and the global carbon cycle
- dedicated chapters on sea-level change, carbon and other biogeochemical cycles, clouds and aerosols, and regional climate phenomena such as monsoons and El Niño
- more extensive coverage of model projections, with chapters on both near-term and long-term climate projections
- a detailed assessment of climate change observations, modelling and attribution for every continent
- a comprehensive Atlas of Global and Regional Climate Projections: an innovative new feature with time series and maps of 21st-century changes in temperature and precipitation in 35 regions of the world

Simply put, this latest assessment of the IPCC will again form the standard scientific reference for all those concerned with climate change and its consequences, including students and researchers in environmental science, meteorology, climatology, biology, ecology and atmospheric chemistry. It provides relevant material for decision makers and stakeholders at all levels: international, national, and local; and in all branches: government, businesses and NGOs worldwide.

---

From reviews of previous IPCC Assessment Reports:

'... a milestone for climate-change science and policy.'

– Science

'... the world's most authoritative voice on global warming. ... Every member of Congress should read this report.'

– The New York Times

'The detail is truly amazing ... invaluable works of reference ... no reference or science library should be without a set [of the IPCC volumes] ... unreservedly recommended to all readers.'

– Journal of Meteorology

'The subject is explored in great depth and should prove valuable to policy makers, researchers, analysts and students.'

– American Meteorological Society

**CAMBRIDGE**  
UNIVERSITY PRESS  
[www.cambridge.org](http://www.cambridge.org)

ISBN 978-1-107-66182-0



9 781107 661820 >