IBS Center
for Climate Physics

# Climate Prediction Aspects in AR6 and COP27

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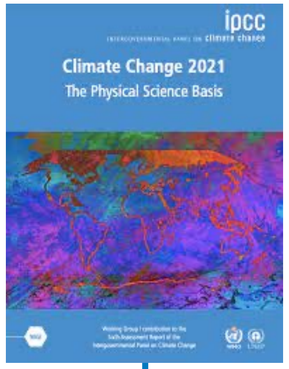
# The AR6 Cycle and UNFCCC Conference of Parties

May. 2017
Scoping Meeting

Three Special Reports (2018~2019)

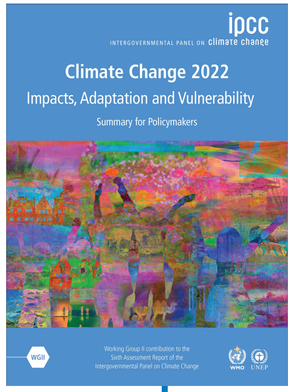
Aug. 2021

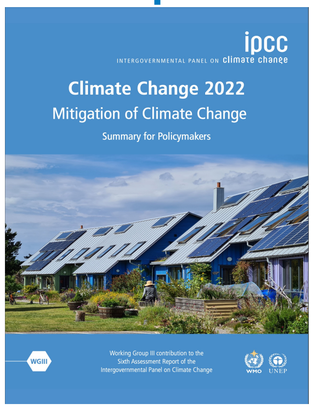




Glasgow Nov. 2021

Mar. 2022




Apr. 2022

Jun. 2022
Bonn Climate Change Conference

Jun. 2022
Scenario Forum

Nov. 2022
Sharm El Sheikh


Apr. 2023
IPCC Workshop on the Use of Scenarios


Mar. 2023

Global Stocktake Dec. 2023 UNFCCC

# The Use of Decadal Climate Prediction in AR6 WGI Chapter 4

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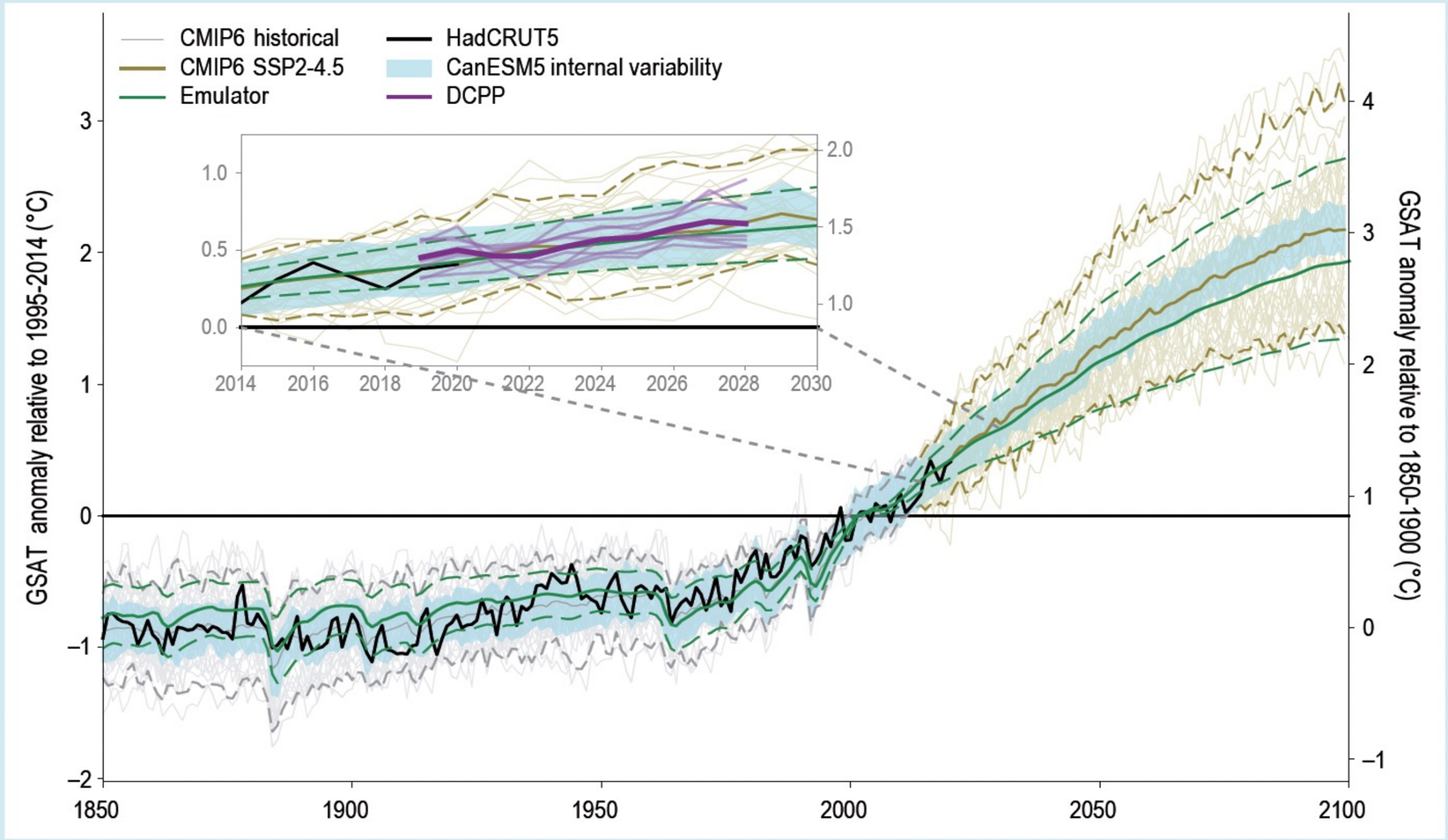
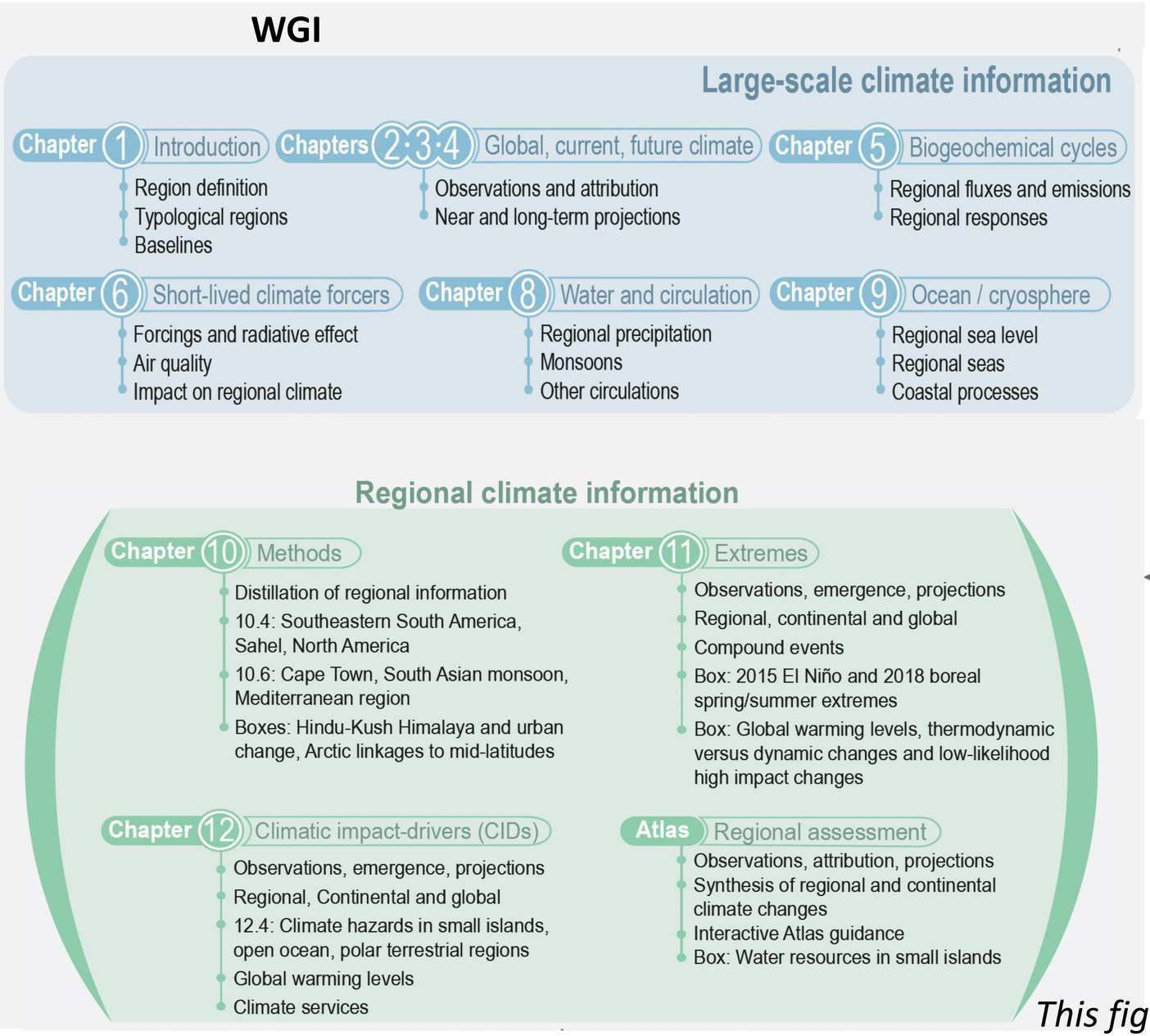



**Box 4.1 Figure 1 | CMIP6 annual mean global surface air temperature (GSAT) simulations and various contributions to uncertainty in the projections ensemble.** The figure shows anomalies relative to the period 1995–2014 (left y-axis), converted to anomalies relative to 1850–1900 (right y-axis); the difference

AR6 WGI Chapter 4 Box 4.1 Figure 1

# Better Linking global to regional climate change




- The AR6 WGI is focused on **physical and biogeochemical climate science information**, with particular emphasis on **regional climate change**.
- These are **relevant for mitigation, adaptation and risk assessment** in the context of complex and evolving policy setting, including **the Paris Agreement, the global stocktake, the Sendai Framework and the Sustained Development Goals Framework**.

*This figure is modified from AR6 WGI Ch10 Figure 10.4.*

AIV

# Annex IV: Modes of Variability

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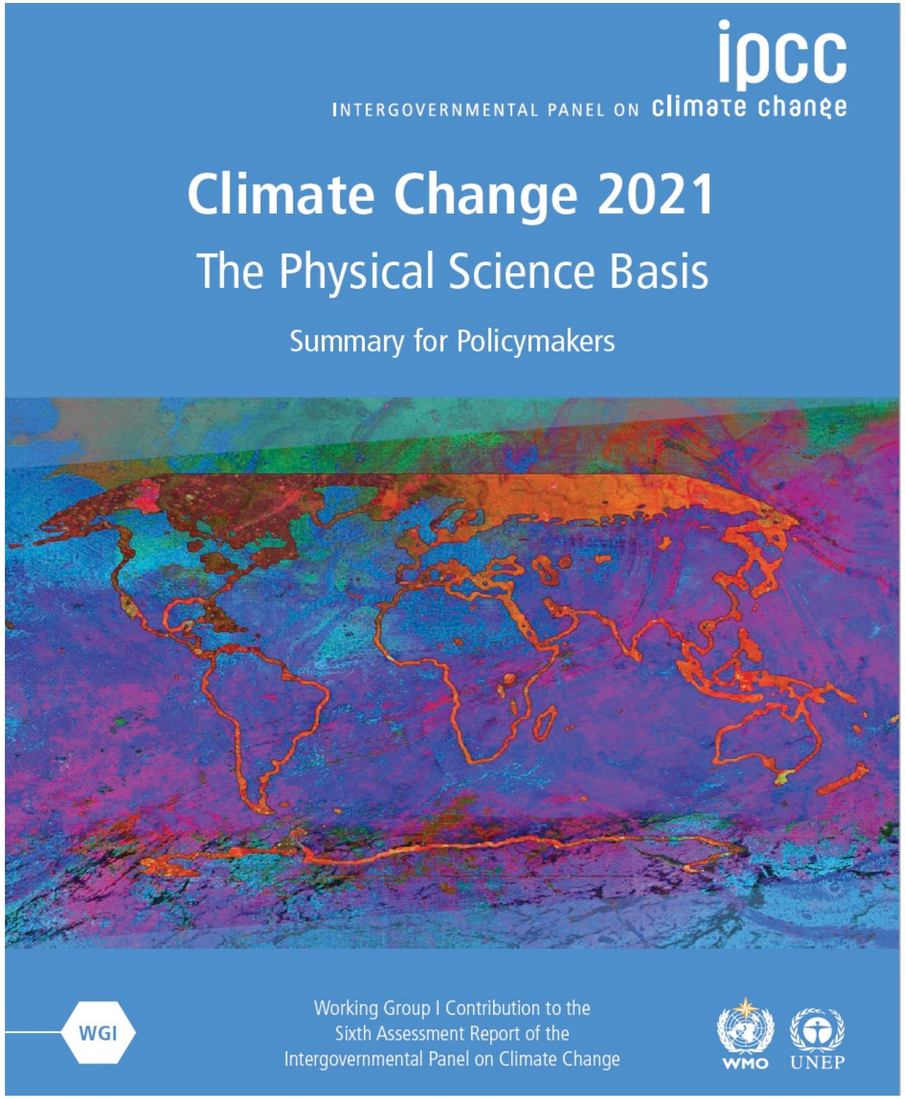
Adam S. Phillips (United States of America)

## Table of Contents

# AR6 WGI SPM Structure




Introduction

A. The Current State of the Climate

B. Possible Climate Futures

C. Climate Information for Risk Assessment and Regional Adaptation

D. Limiting Future Climate Change

# AR6 WGI SPM C

## C. Climate Information for Risk Assessment and Regional Adaptation

Physical climate information addresses how the climate system responds to the interplay between human influence, natural drivers and internal variability.

Knowledge of the climate response and the range of possible outcomes, including low-likelihood, high impact outcomes, informs climate services, the assessment of climate-related risks, and adaptation planning.

Physical climate information at global, regional and local scales is developed from multiple lines of evidence, including observational products, climate model outputs and tailored diagnostics.

# AR6 SYR SPM

**B.1.5** Natural variability will continue to modulate human-caused climate changes, either attenuating or amplifying projected changes, with little effect on centennial-scale global warming (*high confidence*). These modulations are important to consider in adaptation planning, especially at the regional scale and in the near term. If a large explosive volcanic eruption were to occur[35], it would temporarily and partially mask human-caused climate change by reducing global surface temperature and precipitation for one to three years (*medium confidence*). {4.3}

[28] Global warming (see Annex I: Glossary) is here reported as running 20-year averages, unless stated otherwise, relative to 1850–1900. Global surface temperature in any single year can vary above or below the long-term human-caused trend, due to natural variability. The internal variability of global surface temperature in a single year is estimated to be about ±0.25°C (5–95% range, *high confidence*). The occurrence of individual years with global surface temperature change above a certain level does not imply that this global warming level has been reached. {4.3, Cross-Section Box.2}

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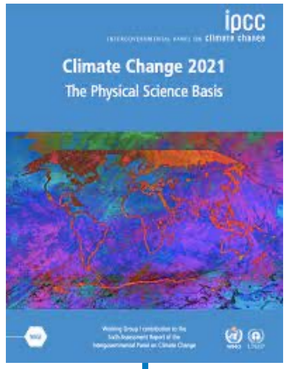


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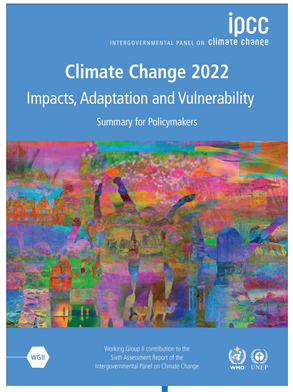


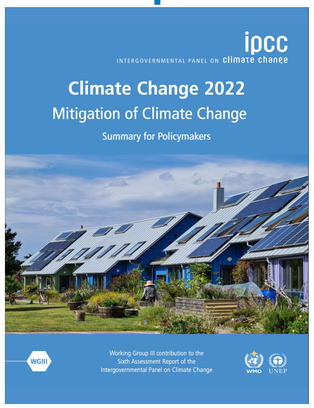


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# Climate Information for Decision Making

**Nov 9, 2022**

**Welcome and Introduction from the World Climate Research Programme (WCRP)**

Mike Sparrow (Head WCRP Secretariat) and Detlef Stammer/Helen Cleugh (WCRP Chair/Vice-Chair)

1. **Characterization of Societal Needs**
   - Bruce Hewitson: “Bringing society into the science”
   - Regina Rodrigues: “Inverting the construction of climate information for local-to-regional climate risk”

   ***Questions***

2. **Methods for Observing and Modelling Change**
   - Christian Jakob: “Observing and Modelling the climate for a net-zero emissions future”
   - Daniela Jacob: “Regional climate change information for risk assessments and adaptation action”

   ***Questions***

3. **Impacts and Attribution**
   - Gabi Hegerl: “Attribution and prediction: mean temperatures and extreme heat”
   - Wendy Broadgate: “Earth Commission: Safe and just Earth system boundaries for a stable and resilient planet”
   - June-Yi Lee: “Advances in developing physical climate information for decision making in the AR6 WGI Report”
   - Sonia Seneviratne: “Past and projected changes in weather and climate extremes”

   ***Questions***

# Climate Information for Near-term Preparedness/Risk Management

**Nov 16, 2022**

1. **IPCC AR6 WGI**
   - June-Yi Lee: “Near-term climate information for adaptation and risk assessment: Advances in AR6 and future direction for AR7”
   - Muhammad Amjad: “Novelty of IPCC AR6 WGI Interactive Atlas for Regional Climate Assessment in Near term”

   ***Q&A***

2. **IPCC AR6 WGII**
   - Zelina Zaiton Ibrahim: “Advances in Adaptation and Risk Assessment in the AR6 WGII”
   - Maarten van Aalst: “From Information to Action: How to Leverage Near-term Information for Better Risk Management”

   ***Q&A***

3. **WMO WCRP**
   - Kirsten Findell: “WCRP’s Near-term Climate Activities: Explaining and Predicting Earth System Change”
   - Wilfran Moufouma-Okia: “Advances in Climate Prediction Services for Near-term Preparedness”

   ***Q&A***

4. **Panel Discussion**

# UNESCO event on the role of basic sciences in climate change mitigation

***The Role of Basic Sciences in Climate Change Mitigation***

**High-Level Thematic Session of the COP27**

**Thursday, 10 Nov. 2022 at 10H00-11H00**
**UNESCO Pavilion - Green Zone**
**Online Participation :**
**ps://unesco-org.zoom.us/webinar/register/WN_bWoAfilmQzuIMkBEIQjt-A**

Under the umbrella of **the International Year of Basic Sciences for Sustainable Development 2022**, UNESCO will organise a COP 27 hybrid side event on the theme **"the role of basic sciences in climate change mitigation"** on the **World Science Day for Peace and Development** on 10th November 2022 in COP 27 UNESCO Pavilion in Sharm El Sheikh, Egypt, and online. The side event will invite 4 scientists and policymakers to have a concrete discussion on **the contribution of basic sciences to addressing climate change mitigation issues** and share **new developments and initiatives in the basic science of climate change** and touch upon key issues in **international scientific cooperation.**

# WMO event on climate science information for adaptation


## Climate Science Information for Adaptation

EVENT ENDED
9 November 2022, 13:00 – 14:00 EET (UTC/GMT+2)
WMO-IPCC-MERI Pavilion
COP27 - Sharm El Sheikh, Egypt

WATCH THE WEBCAST

At COP26 (Glasgow), under the Climate Science Information for Climate Action Initiative, the GCF and WMO launched a suite of tools to assist stakeholders in incorporating climate science information into adaptation investments, plans and policies. These resources include an online Climate Information Platform (CIP) with instant summary reports of climate change for any site on the globe and easy access to many pre-calculated climate indicators, based on state-of-the-art in climate science, of the past, present and future. In addition, the tool Climpact offers the calculation of climate indices using any weather and climate data.

These resources have been elaborated in co-creation with stakeholders during several local/regional workshops worldwide. The next phase of the collaboration aims to provide stakeholders with additional support through a combination of capacity development, hands-on technical support, and creating an online resource for easy access to a wider selection of authoritative methods, tools, and climate information. It will also focus on maintaining and improving the CIP in response to user feedback.

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# Thank You!