

Summary for Policy Makers
Technical Summary

- Chapter 1: Framing, context, methods
- Chapter 2: Changing state of the climate system
- Chapter 3: Human influence on the climate system
- Chapter 4: Future global climate: scenario-based projections and near-term information
- Chapter 5: Carbon budgets, biogeochemical cycles and feedbacks
- Chapter 6: Short-Lived Climate Forcers and Air Quality
- Chapter 7: The Earth's Energy Budget, Climate Feedbacks, and Climate Sensitivity
- Chapter 8: Water Cycle Changes
- Chapter 9: Ocean, Cryosphere, and Sea Level Change
- Chapter 10: Linking Global to Regional Climate Change
- Chapter 11: Weather and Climate Extreme Events in a Changing Climate
- Chapter 12: Climate change information for regional impacts and risk assessment

Options for cross-WG integration including Atlas, Cross Working Group Glossary

Chapter 1: Framing, context, methods

Executive Summary

- Synthesis of key findings from AR5 and connections to AR6 Special Reports
- Framing in the context of the Global Stocktake, mitigation, adaptation, and risk assessment
- Assessment approach
- Observational and reanalysis developments since the AR5
- Model and experimental design developments since the AR5
- Emissions and forcing scenarios
- Treatment of uncertainty

Frequently Asked Questions

Chapter 2: Changing state of the climate system

Executive Summary

- Multi-millennial context, pre-industrial to present day
- Natural and anthropogenic forcings
- Radiative forcing
- Large-scale indicators of change in the atmosphere, ocean, cryosphere, land, and biosphere
- Modes of variability

Frequently Asked Questions

Chapter 3: Human influence on the climate system

Executive Summary

- Overview of model performance and development since the AR5
- Simulated large-scale indicators of change in the atmosphere, ocean, cryosphere, land, and biosphere
- Simulated modes of variability
- Natural variability versus anthropogenically-forced change
- Attribution of large-scale observed changes

Frequently Asked Questions

Chapter 4: Future global climate: scenario-based projections and near-term information

Executive Summary

- Projections of global mean surface temperature and other key global indicators
- Evaluation of multi-model ensemble methods
- Large scale patterns of climate change
- Commitment, climate targets, overshoot, irreversibility, abrupt change.
- [Geoengineering]
- Interplay between internal variability and forced change
- Variability and unexpected changes of global mean surface temperature
- Near-term predictability, sources and capabilities
- Responses to short-lived forcings, including volcanoes in context of near term predictability
- Synthesis of climate information in the near-term

Frequently Asked Questions

Chapter 5: Carbon budgets, biogeochemical cycles and feedbacks

Executive Summary

- Feedbacks between climate and biogeochemical cycles, including paleoclimate information
- Ocean acidification
- Historical trends and variability of CO₂, CH₄ and N₂O; sources and sinks
- Projections of global biogeochemical cycles from near-term to long-term
- Abrupt change, irreversibility
- Model evaluation, emergent constraints
- Transient climate response to cumulative emissions and remaining carbon budgets for climate targets
- Impacts of mitigation options including [geoengineering] on biogeochemical cycles

Frequently Asked Questions

Chapter 6: Short-Lived Climate Forcers and Air Quality

Executive Summary

- Key emissions: natural, anthropogenic, historical and scenarios
- Observed and reconstructed concentrations and radiative forcing
- Direct and indirect-aerosol forcing
- Greenhouse gases lifetimes
- Future air pollution, including cities
- Implications of different shared socio-economic pathways

Frequently Asked Questions

Chapter 7: The Earth's Energy Budget, Climate Feedbacks, and Climate Sensitivity

Executive Summary

- Energy budget and its changes through time
- Radiative forcing: definitions, estimates, and its representation in models
- Climate feedbacks
- Sensitivity of the climate system: methods and uncertainty
- Empirical constraints on the sensitivity of the climate system, including paleo
- Global warming potential, global temperature change potential, and other metrics

Frequently Asked Questions

Chapter 8: Water Cycle Changes

Executive Summary

- Observations, models, methods and their reliability
- Past, present and projected changes, trends, variability and feedbacks in the water cycle
- Circulation, processes and phenomena affecting moisture and precipitation patterns (e.g. cloud-aerosol processes, monsoon)
- Extremes
- Changes in seasonality of natural storage and water availability
- Abrupt change
- Confidence in projections

Frequently Asked Questions

Chapter 9: Ocean, Cryosphere, and Sea Level Change

Executive Summary

- Past and future changes in ocean circulation and properties (trends, variability and extremes)
- Past and future changes in marine and terrestrial cryosphere
- Evaluation of models and projection methods
- Detection and attribution
- Past global and regional sea level changes
- Projections of global and regional sea level change
- Abrupt change and long-term commitment
- Extreme water levels (tides, surge and ocean waves)

Frequently Asked Questions

Chapter 10: Linking Global to Regional Climate Change

Executive Summary

- Regional phenomena, drivers, feedbacks and teleconnections
- Regional scale observations and reanalyses
- Interplay between internal variability and forced change at the regional scale, including attribution
- Evaluation of methods, including downscaling and bias adjustment
- Confidence in regional climate information, including quantification of uncertainties
- Scale specific methodologies e.g. urban, mountains, coastal, catchments
- Approaches to synthesizing information from multiple lines of evidence

Frequently Asked Questions

Chapter 11: Weather and Climate Extreme Events in a Changing Climate

Executive Summary

- Event type definitions including weather and climate timescales and compound events
- Observations for extremes and their limitations, including paleo
- Mechanisms, drivers and feedbacks leading to extremes
- Ability of models to simulate extremes and related processes
- Attribution of changes in extremes and extreme events
- Assessment of projected changes of extremes and potential surprises
- Case studies across timescales

Frequently Asked Questions



Chapter 12: **Climate change information for regional impacts and risk assessment**

Executive Summary

- Framing: physical climate system and hazards
- Region-specific-integration of information, including confidence
- Information (quantitative and qualitative) on changing hazards: present day, near term and long term
- Region-specific methodologies
- Relationship between changing hazards, global mean temperature change, scenarios and emission

Frequently Asked Questions