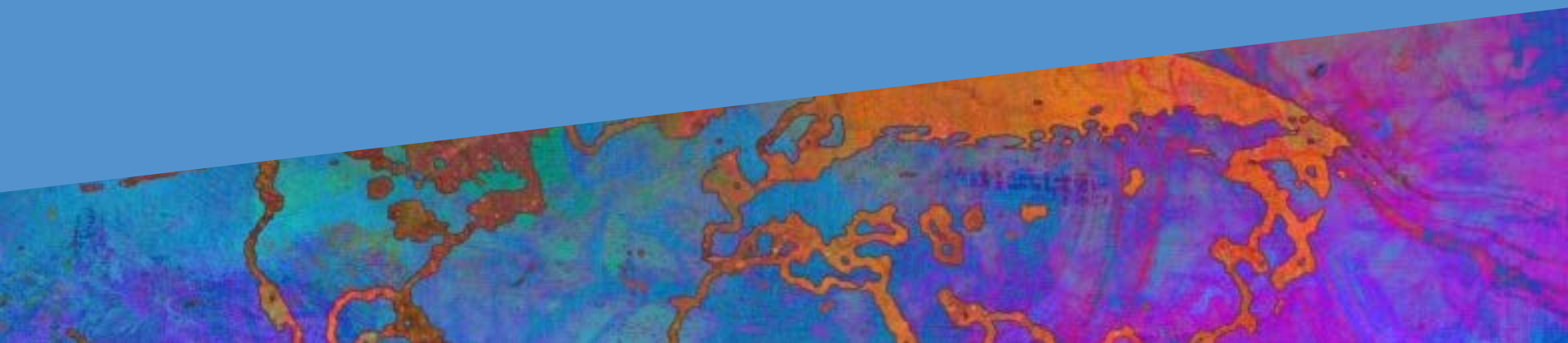
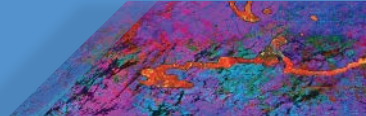


IPCC WGI – WCRP collaborations

Valérie Masson-Delmotte, Panmao Zhai, Anna Pirani





Integrating lines of evidence – User oriented framing

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: Global carbon and other biogeochemical cycles and feedbacks

Chapter 6: Short-lived climate forcers

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

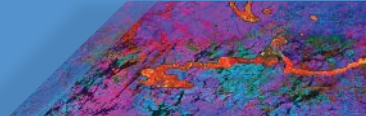
Chapter 12: Climate change information for regional impact and for risk assessment

Atlas of Regional Climate Information *and interactive atlas*

**Current state
Possible futures**

**Climate
processes**

**Regional climate
information**



Cross-WG integration : scenarios; levels of global warming ; carbon budgets

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: Global carbon and other biogeochemical cycles and feedbacks

Chapter 6: Short-lived climate forcers

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Atlas of Regional Climate Information *and interactive atlas*

**Current state
Possible futures**

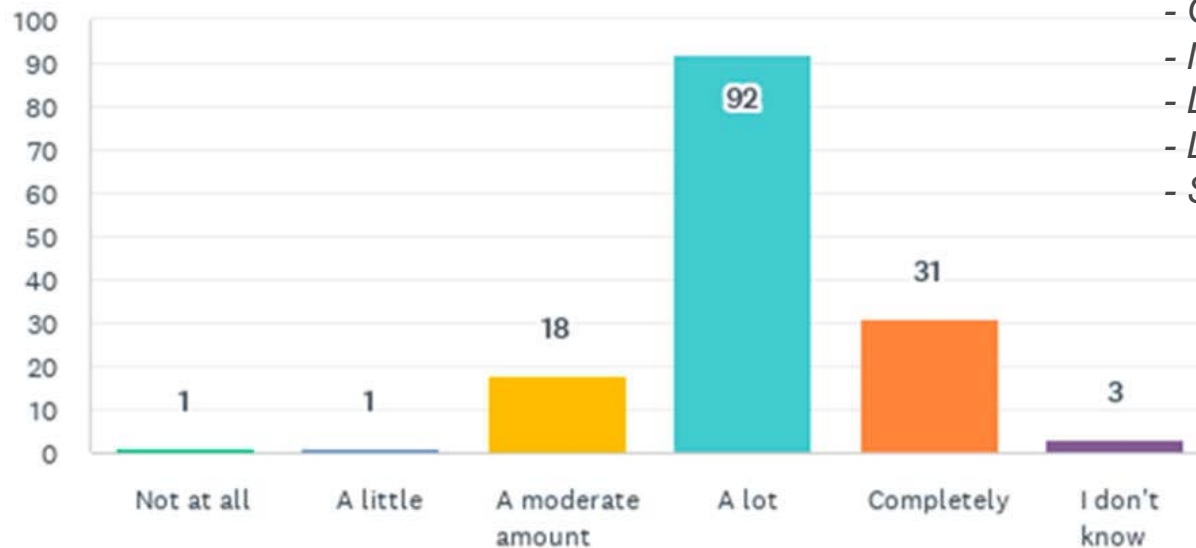
**Climate
processes**

**Regional climate
information**

***Information relevant for risk assessment
and regional adaptation (CID, LLHI)***

Limiting future climate change

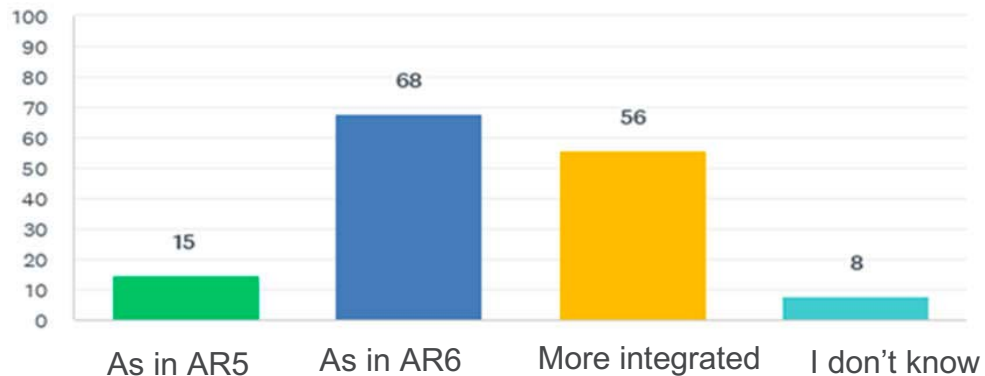
- Was the report structure well suited?



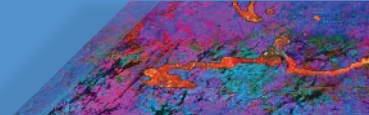
Coordination challenges

- *Overlaps (e.g. water – cryosphere)*
- *Model evaluation and paleo less visible*
- *Droughts*
- *Length*
- *Silos between groups of chapters*

- How should the AR7 be structured?



- More integrated (solution oriented, policy relevant)
- Rethinking structure x WGs
- Cross-chapter boxes, structured around questions
- Fewer chapters, integrate means and extremes
- WGI-II regional report



- Key role of WCRP coordinated activities

Several chapters closely related to core projects and grand challenges

Timely review papers (eg. ECS)

Model intercomparison projects

Group reviews (community biases) ; detailed early career scientist group reviews

Usefulness of server-side / analysis tools for authors

- Challenges

Literature gaps

Region specific information

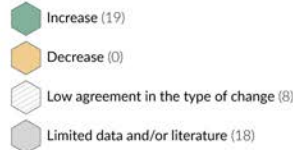
Engagement of scientists from the Global South (eg. climate sensitivity)

Constrained projections (possible for global surface T, ocean heat and sea level)

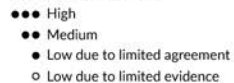
Emulators available late for WGIII

Use of CID framework and LLHI storylines for impacts-risks

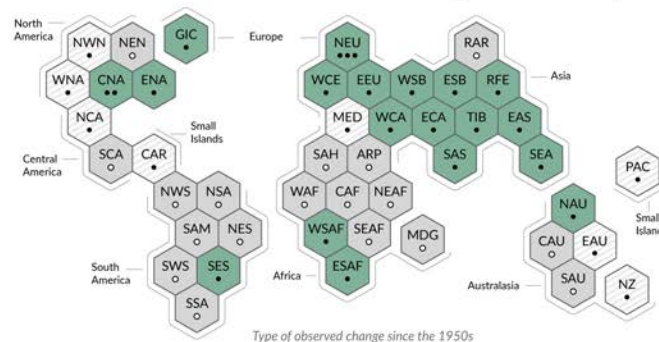
Type of observed change in heavy precipitation



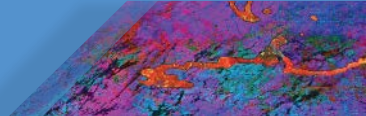
Confidence in human contribution to the observed change



b) Synthesis of assessment of observed change in heavy precipitation and confidence in human contribution to the observed changes in the world's regions



Type of observed change since the 1950s



- From CMIP6 to CMIP7

*Dialogue between IPCC authors, TSU, bureau and CMIP coordinators?
On lessons learnt, feedback to inform planning of CMIP7*

Timing (simulations – publications – assessment)

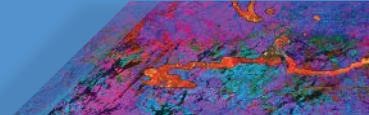
CORDEX and WGII (using CMIP5 in the AR6)

Access (server side processing, variables, expanding access, and errata)

Scenario choices, equity concerns

Engagement of Global South scientists and authors

Data - FAIR (DDC)



- Different timelines for AR7 and CMIP7?

CMIP scientifically driven

Focus set of experiments relevant for AR7 (incl. WGII) + emulators

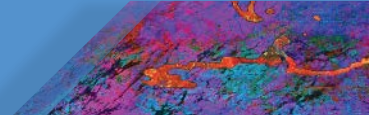
Enhanced ScenarioMIP, DECK, historical (updated forcings + beyond 2100)

More CMIP6 assessment (CORDEX, WGII)

Early access to CMIP7 in all regions

Pre-produced metrics of model skills – credibility

Responsive MIPs (eg COVID, war, volcano)



- Key issues

Regionally relevant information (incl. urban scale)

Compound extremes and event attribution

Overshoot

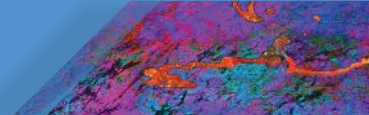
Distillation of regional information (bias corrections – constrained projections)

Tipping points

Climate velocity and ecosystems

Biological processes – ecosystem degradation – biodiversity loss – feedbacks

SLCF and air quality (health co-benefits of mitigation)



- Suggestions for regional coordinated activities

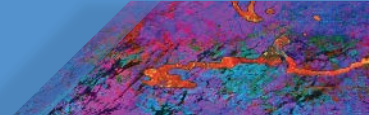
“WCRP LightHouse Activities may invigorate and focus the community's efforts”

“train young people up for the AR7, with an eye on achieving greater diversity.”

Regular webinars, regional workshops, thematic working groups, analysis groups and discussion networks

Promote discussion and exchange on good practices in distillation of regional climate information

Systematic regional literature reviews (considering literature in the region's language(s))



- IPCC WGI - WCRP discussion

Diversity and renewal in authorship

Addressing knowledge gaps – topics and regionally

Coordination challenges and support for authors and the assessment process

Data access and documentation

Planning and timelines