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## E-learning Reviewing of Draft IPCC Assessment Reports

Tuesday, 19 June, 2018

***Webinar 3: Outstanding questions;  
Reviewing uncertainties and  
robustness; issues for Africa***

The webinar will commence shortly

# E-learning Reviewing of Draft IPCC Assessment Reports

Tuesday 19 June 2018 1-2.30 pm CEST/11-12 pm GMT + 2



SOUTH  
SOUTH  
NORTH

Promoting sustainable development;  
addressing climate change.



ClimateContact-  
Consultancy



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## ***Webinar 3: Outstanding questions; Reviewing uncertainties and robustness of IPCC statements; issues for Africa***

Moderator:

Karen Morris, SSN



Presenters:

Arthur Petersen, UCL



Yacob

Mulugetta, UCL





# Programme

- Outstanding questions from Webinars 1 and 2 (Leo Meyer)
- Uncertainty and robustness (Arthur Petersen)
- Specific issues for Africa (Yacob Mulugetta)
- Q&A



# Uncertainty and Robustness



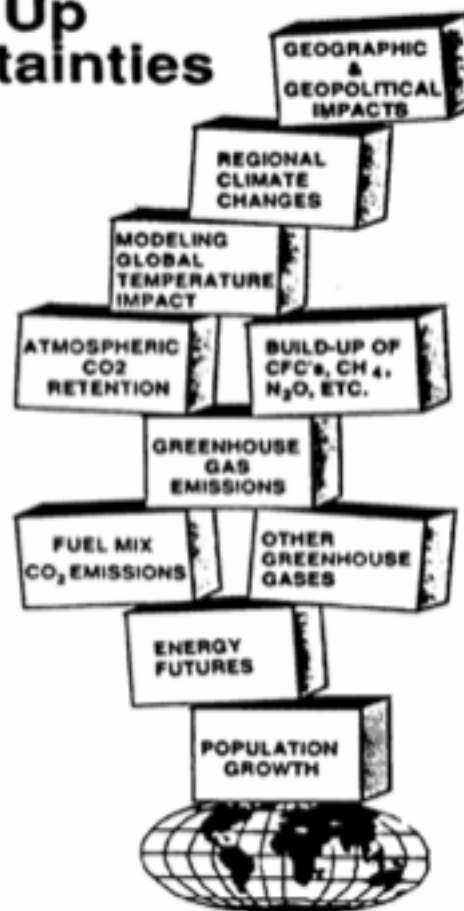
# Uncertainty and Robustness – Outline

- Sources of uncertainty
- Strong and weak science
- Confidence
- Likelihood
- Roles of actors in Plenary
- Robustness

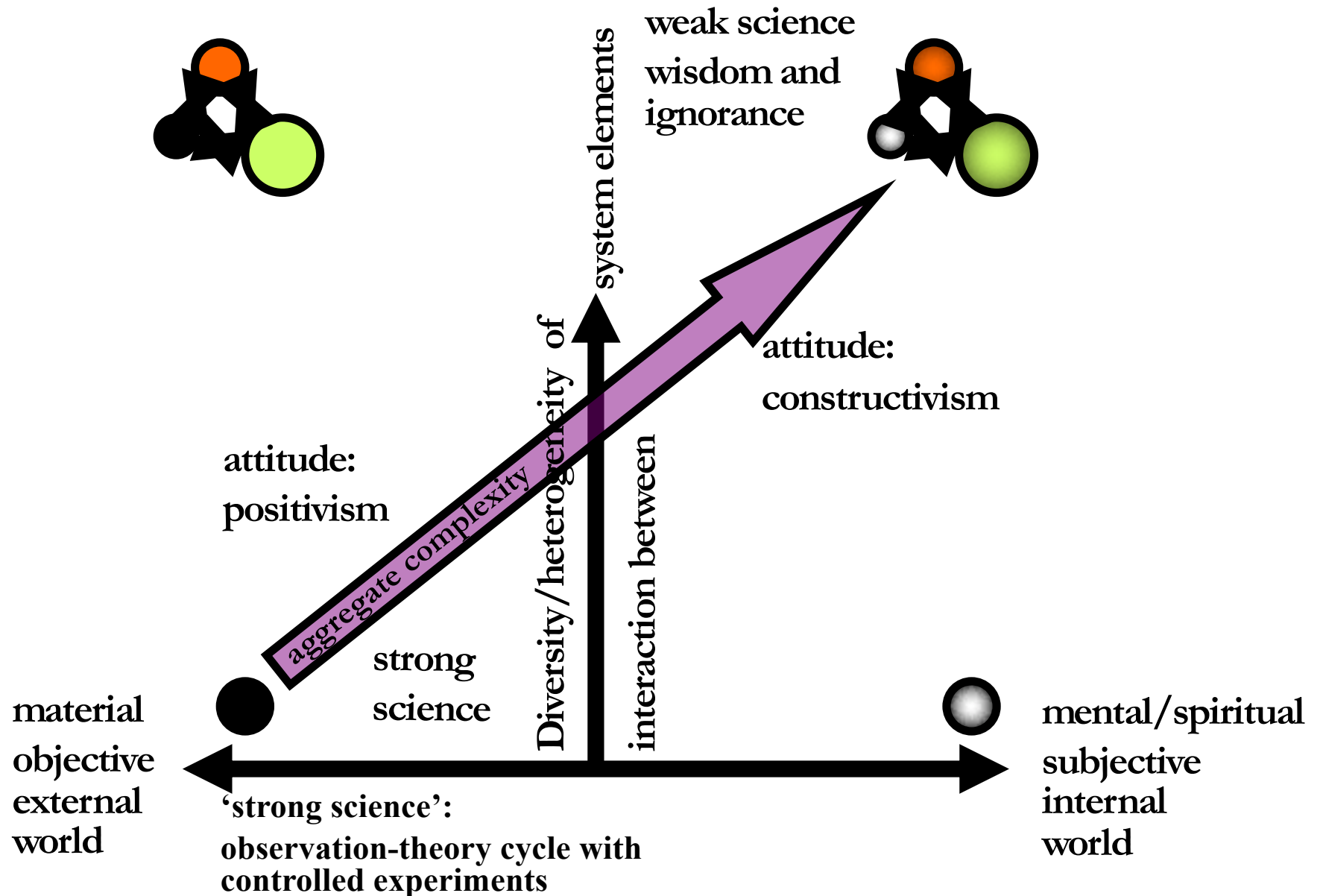
# Sources of Uncertainty

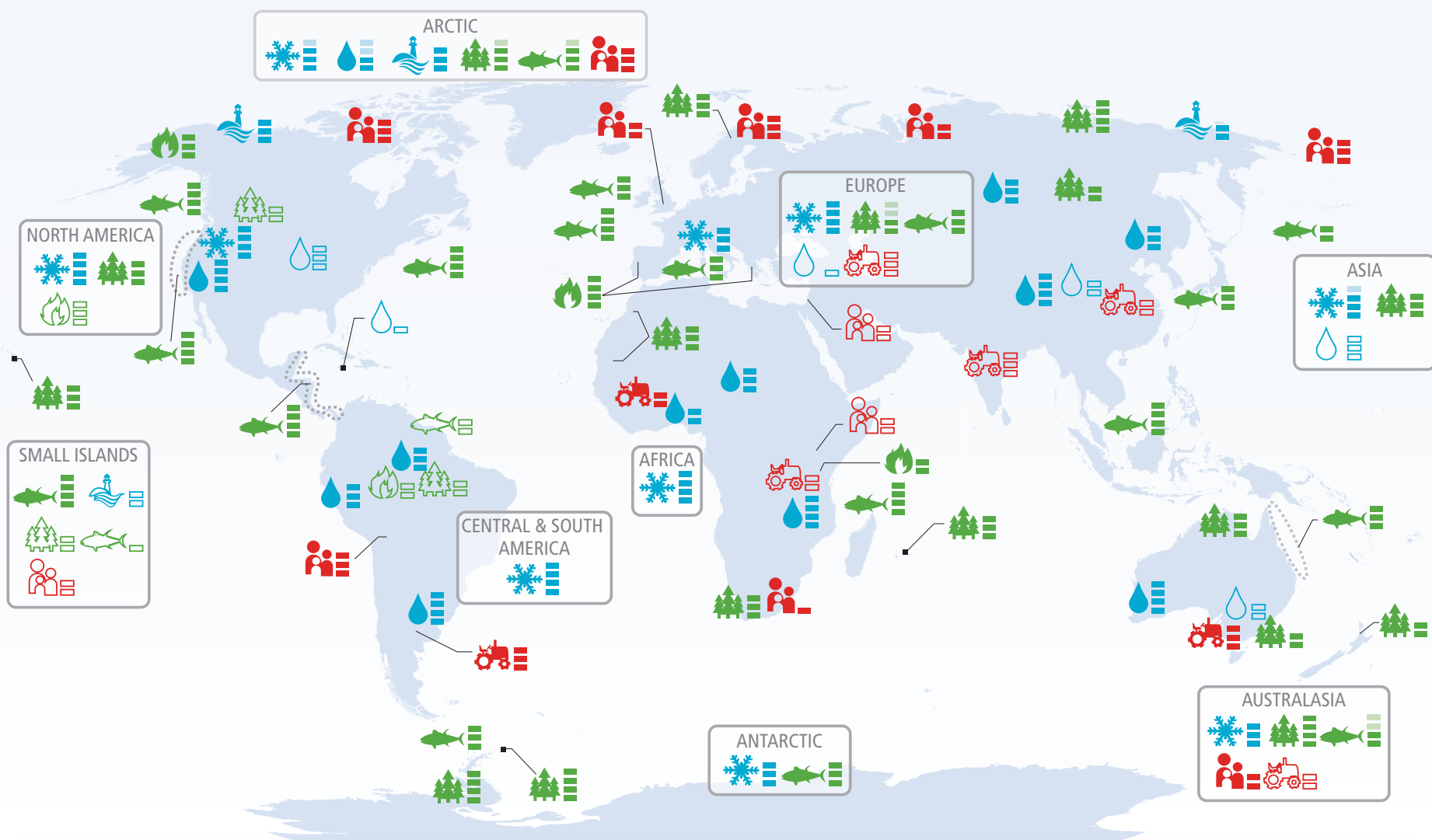
## GLOBAL CLIMATE CHANGE

### Piling Up Uncertainties



# Strong and Weak Science





#### Confidence in attribution to climate change



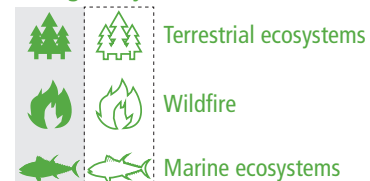
□ indicates confidence range

#### Observed impacts attributed to climate change for

##### Physical systems



##### Biological systems



##### Human and managed systems

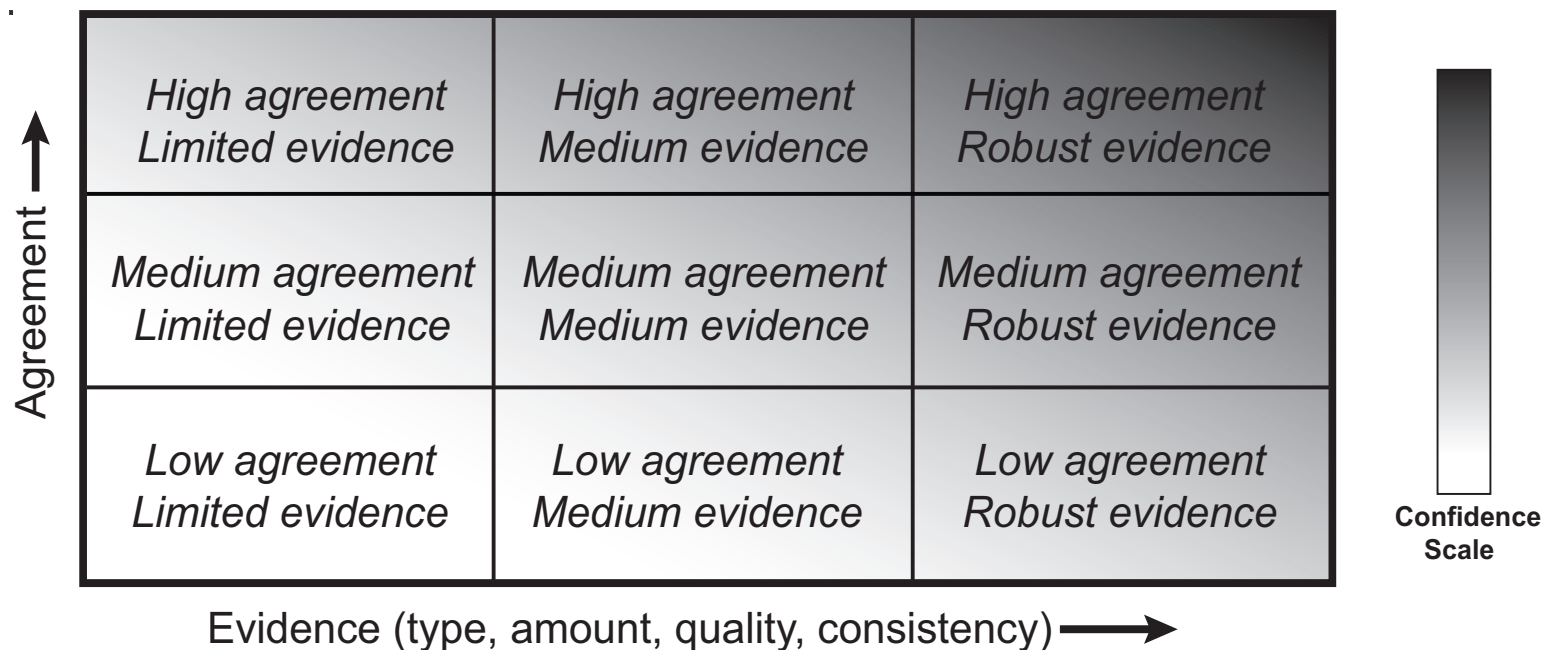


□ Regional-scale impacts

Outlined symbols = Minor contribution of climate change  
Filled symbols = Major contribution of climate change



# Confidence



**Figure 1:** A depiction of evidence and agreement statements and their relationship to confidence. Confidence increases towards the top-right corner as suggested by the increasing strength of shading. Generally, evidence is most robust when there are multiple, consistent independent lines of high-quality evidence.

# Likelihood

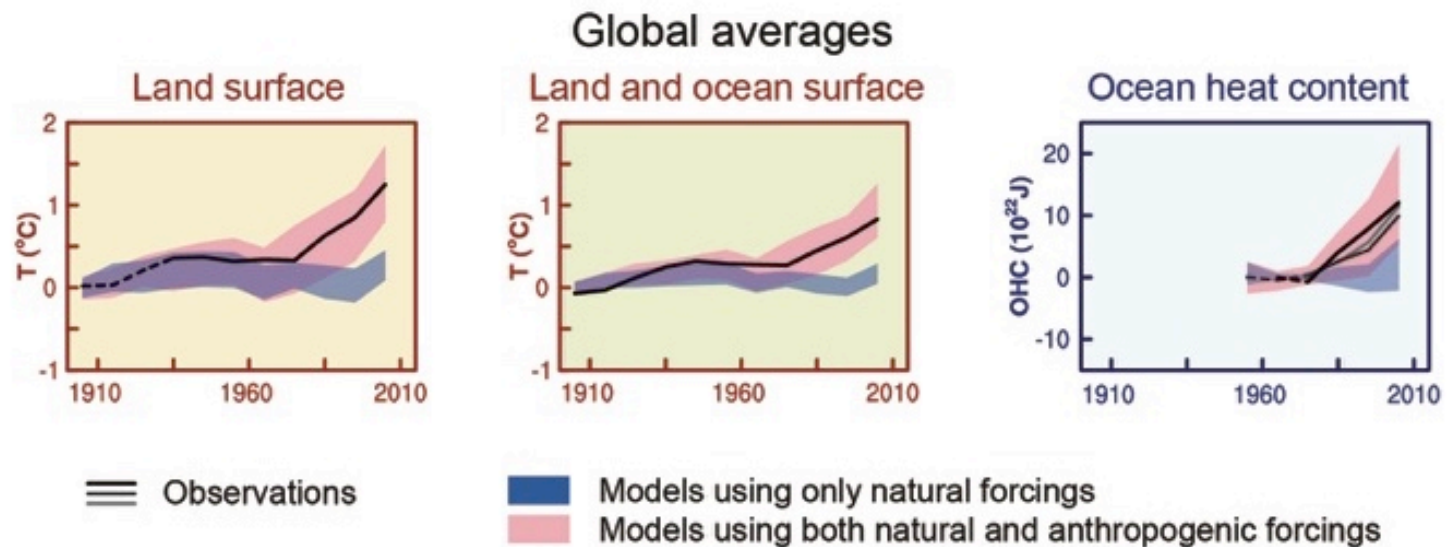
(can only be assigned if confidence is high enough)

The following terms have been used to indicate the assessed likelihood, and typeset in italics:

<b>Term*</b>	<b>Likelihood of the outcome</b>
<i>Virtually certain</i>	99–100% probability
<i>Very likely</i>	90–100% probability
<i>Likely</i>	66–100% probability
<i>About as likely as not</i>	33–66% probability
<i>Unlikely</i>	0–33% probability
<i>Very unlikely</i>	0–10% probability
<i>Exceptionally unlikely</i>	0–1% probability

# Examples of Likelihood Statements

**IPCC 2013:** taking into account all uncertainties (including model uncertainty): largest part of warming is **‘extremely likely’** (95% chance) due to anthropogenic causes



# Examples of Likelihood Statements

## **IPCC Special Report on Climate Change and Land:**

Extreme heat and crop yield reductions are expected to increase most in tropical regions in Africa and South-East Asia under 2°C warming, which combined with the other stressors these regions already face, may be very difficult to adapt to. Beyond localised economic effects, a 2°C warming scenario is *likely* to be associated with significantly lower projected economic growth for a large set of countries (Pretis et al. 2018) (*medium confidence, medium agreement*). The implications of this understanding are that limiting temperature increase to below 1.5°C may avoid a number of impacts and implications that will be much harder to adapt to.

# Roles of Actors in Plenary





# Roles of Actors in Plenary



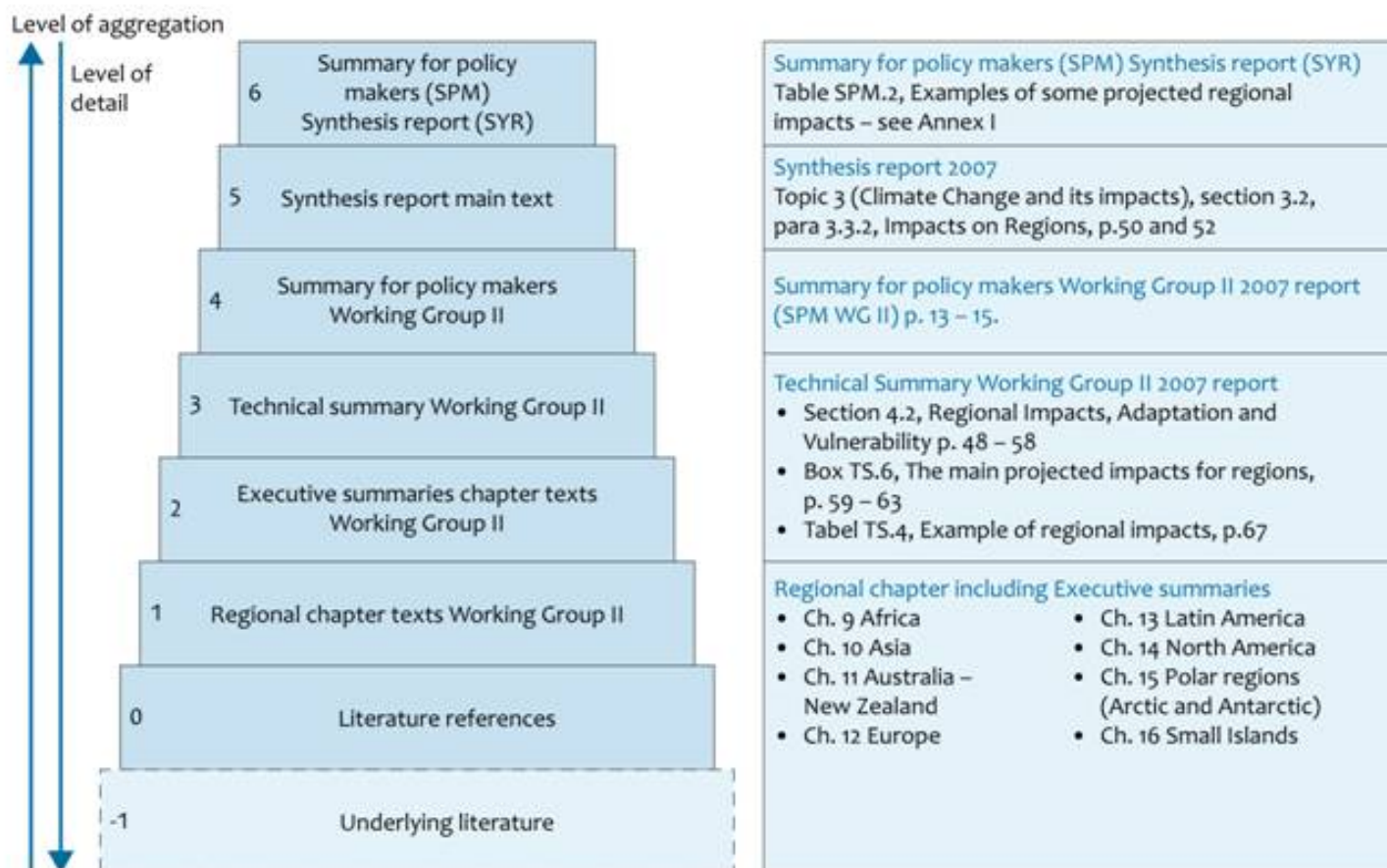
# Robustness

## A. Structure of the Fourth Assessment Reports



# Robustness

## B. Regional chapter analysis pyramid





# Robustness

## What can go wrong?

### E1 Inaccurate statement

E1a Errors that can be corrected by an erratum

E1b Errors that require a redoing of the assessment of the issue at hand

### E2 Inaccurate referencing

C1 Insufficiently substantiated attribution

C2 Insufficiently founded generalization

C3 Insufficiently transparent expert judgment

C4 Inconsistency of messages

C5 Untraceable reference

C6 Unnecessary reliance on grey referencing

C7 Statement unavailable for review



# Specific Issues for Africa



# Specific Issues for Africa – Outline

- Equity issues in knowledge systems
- Practical issues
- Bringing local knowledge from local sources
  - Use of grey literature
- Knowledge issues
- Models and their importance
- Role of reviewers for authors
- Wider political issues



# Equity Issues in Knowledge Systems

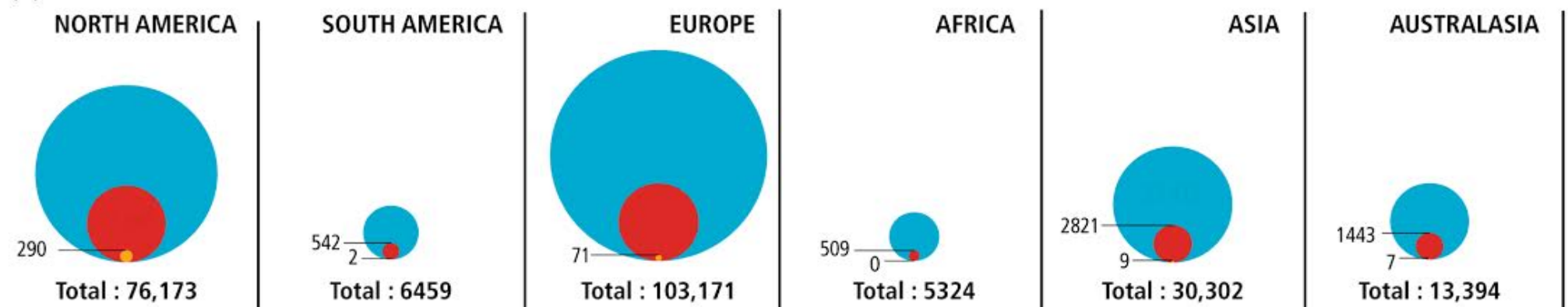
- Africa lagging behind in developing the scientific platform and much needed human capacity for climate-related research
- Knowledge institutions across Africa have weak self-generative capacity
- **Local and national institutions** are in need of producing contextually relevant knowledge



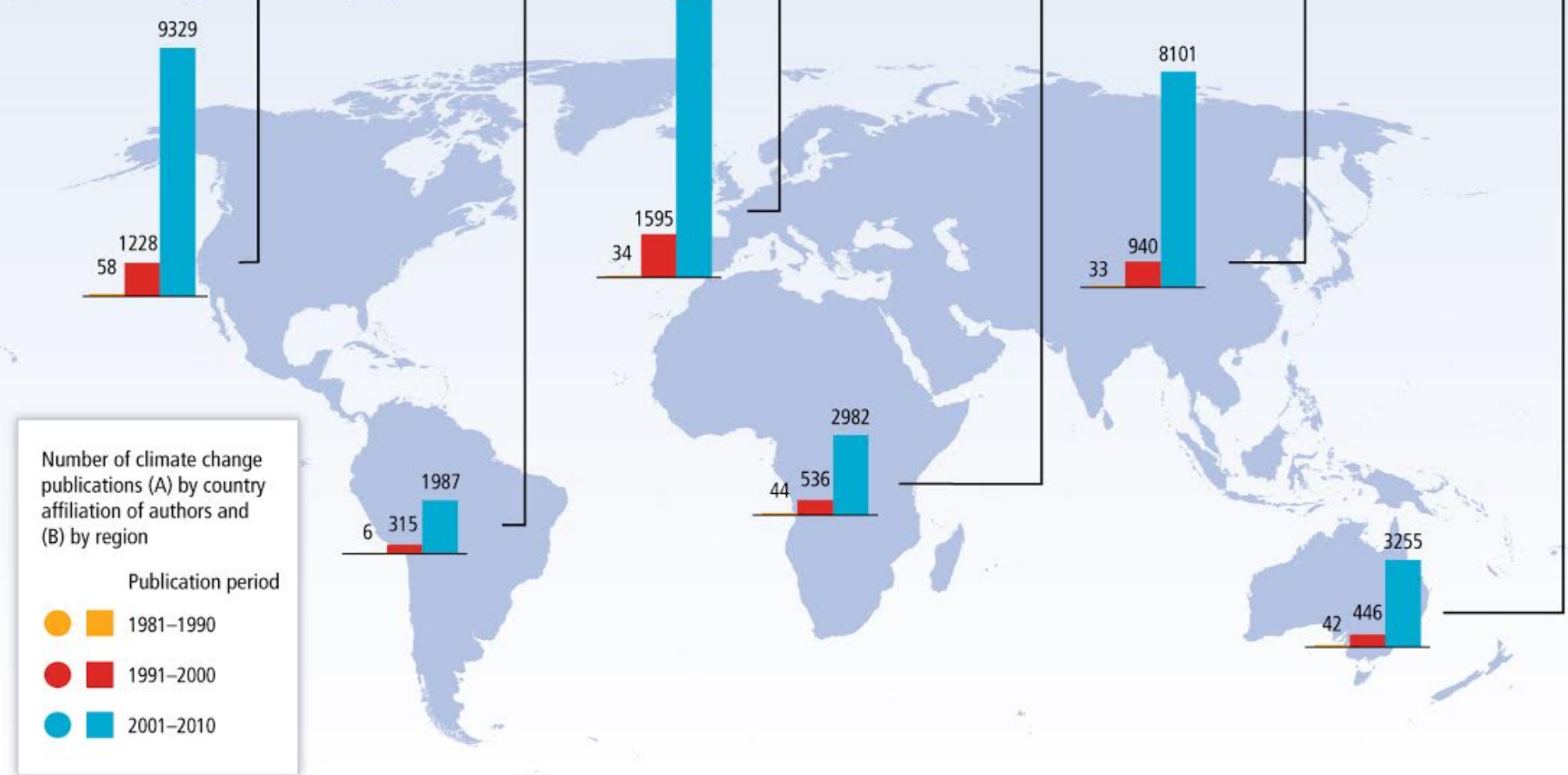
# Equity Issues in Knowledge Systems

- The North–South divide is a consequence of Southern countries' lesser capacities to pursue research
- Southern scientists have argued that most studies feeding into global assessments focus directly or indirectly on issues more relevant to the North and are often based on assumptions not transferable to the South

### (A) Author affiliation



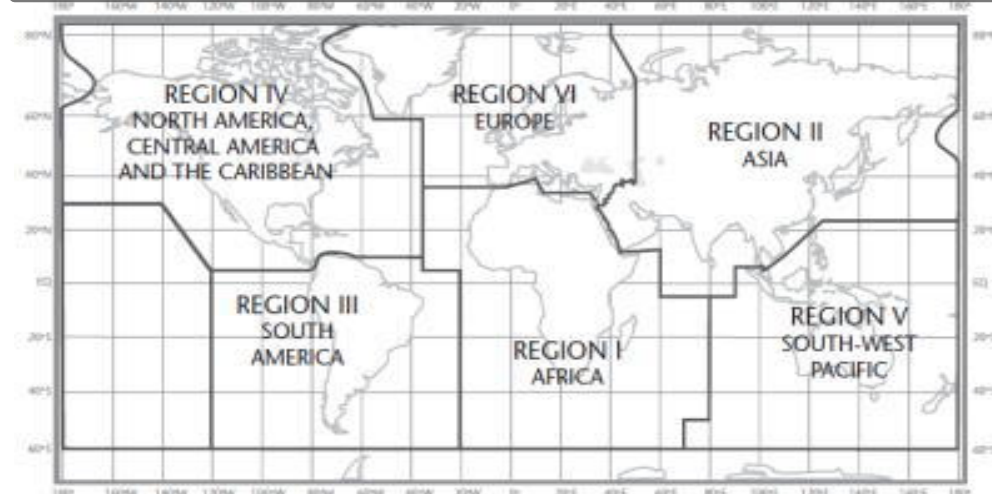
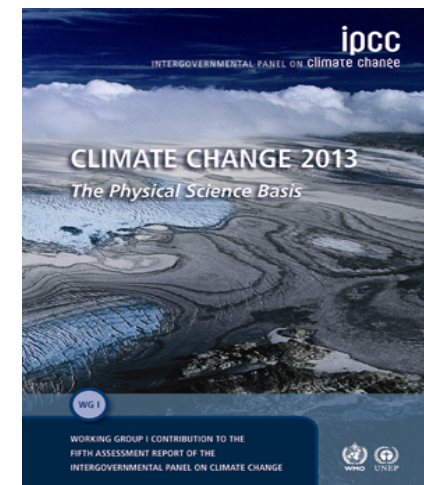
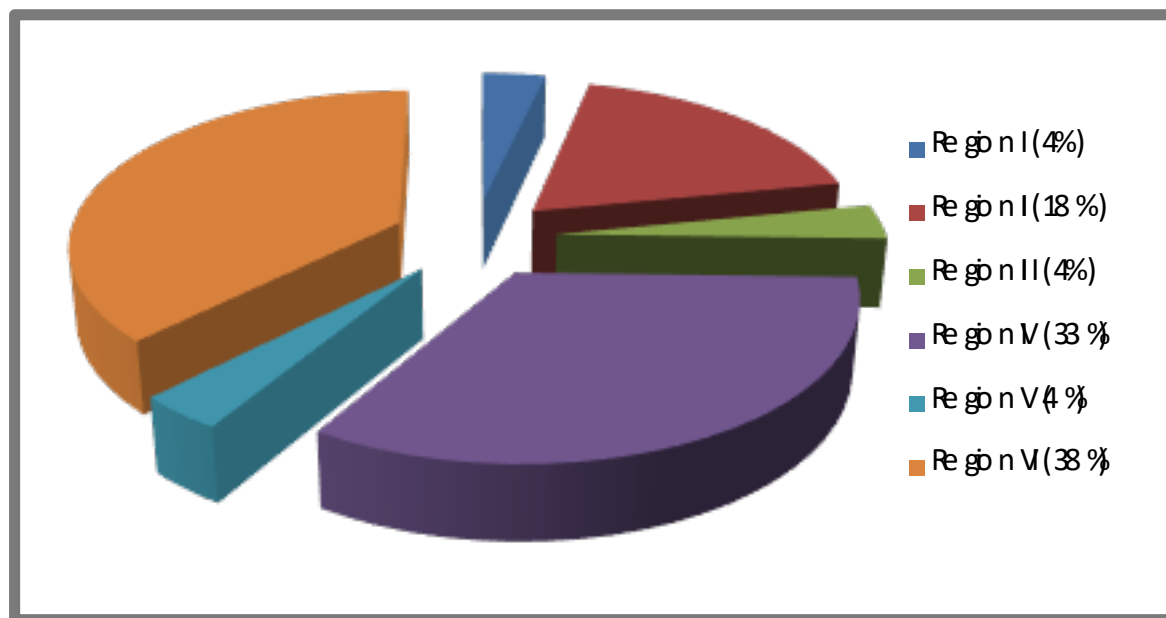
### (B) Climate change literature by region



# Practical issues

- Weak institutions – underfunded
  - Research not a priority – but changing
  - Who pays for research – agenda setting?
- Doing IPCC work is not attractive – time not paid for
  - Highlight other incentives
- Low number of authors/reviewers from Africa
  - huge geographical, ecological and cultural representation

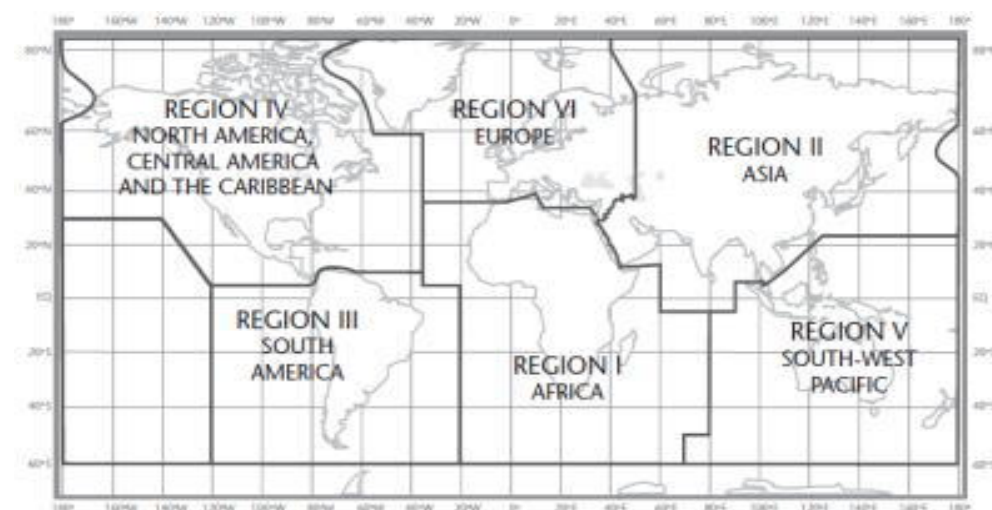
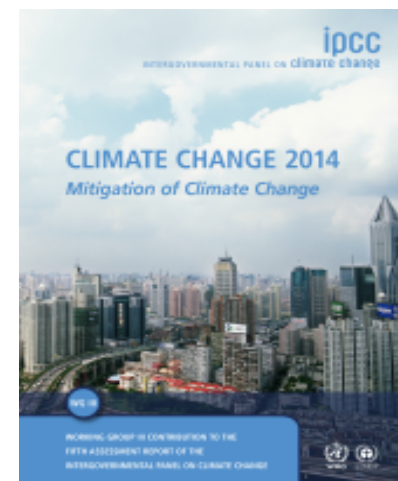
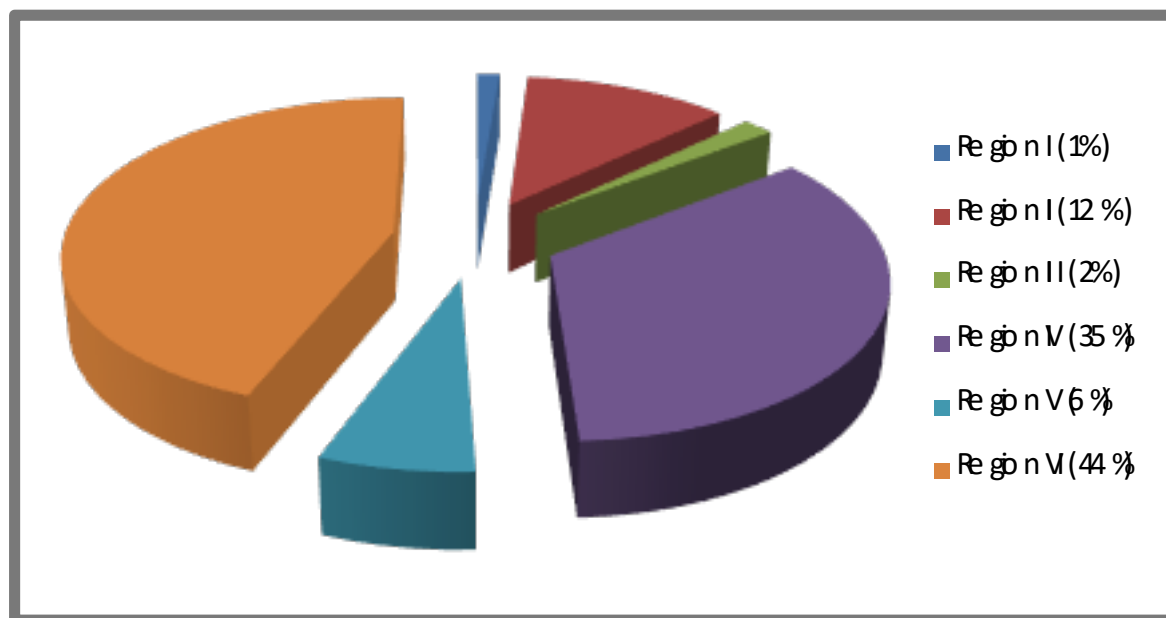
# Authors, Review Editors and Expert Reviewers Contributions by Regions to WGI AR5 (Physical science basis of climate change)



- A total of about 798 contributors
- The highest contribution is from Europe and North America
- Contributions from the developing world least



# Authors, Review Editors and Expert Reviewers Contributions by Regions to WGIII AR5 (Mitigation of Climate Change)



- About 733 contributors
- The highest contribution is from Europe and North America
- Contributions from the developing world least

# Practical issues

- Language barriers & translation of knowledge
  - Arabic and French speaking disadvantaged
  - Use of non-English literature – English summary
  - Can form a community of support
- Information proliferation and validity
- Data production and access – UNECA example
- Plenty of goodwill from other authors
  - No conspiracy
  - Expand network beyond Africa

# Local Knowledge/ Local Sources

- How much is written on “African” climate issues?
- Local knowledge & institutions – important
  - Local people - with ingenuity and local knowledge to manage land degradation & risks
- Understanding of risk – DM context
- How to bring the local into a report that is largely focused on the global?



# Use of Grey literature

"People automatically think that grey literature is [only] from activists and non-governmental organizations' reports. In fact, it includes reports from national academies of sciences, and reports from the International Energy Agency"

Chris Field

# Use of Grey Literature

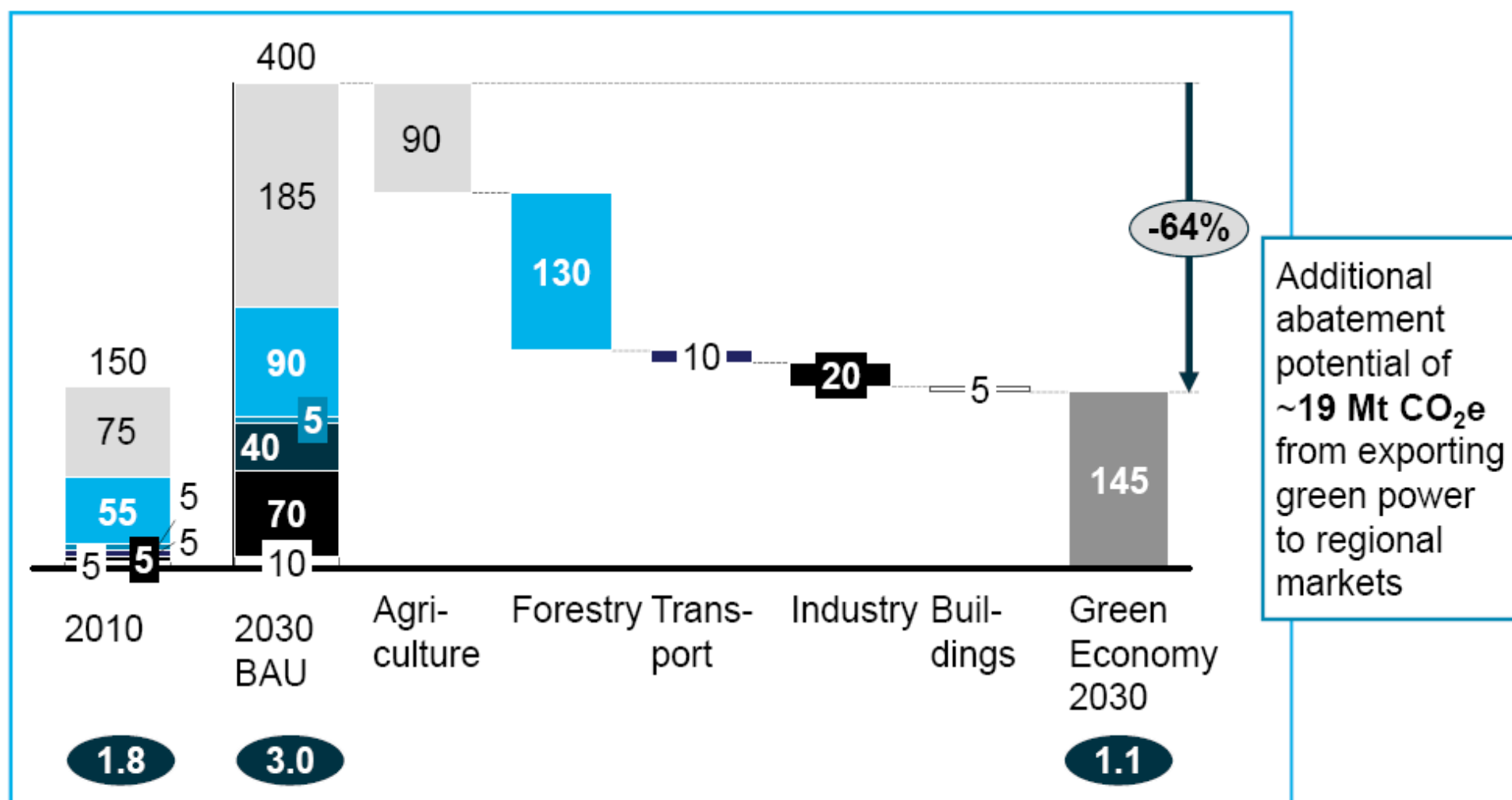
- What is grey literature? (Chris Field)
- Why is it important for Africa?
- What is the problem with using it?
- How can it be used in the IPCC?
- How can it be scrutinized, and what reviewers need to do?

# The CRGE outlines how Ethiopia will reduce 255 mtCO<sub>2</sub> per year while ensuring economic growth



Emissions per year<sup>1</sup>, Mt CO<sub>2</sub>e

t CO<sub>2</sub>e/capita    Agriculture    Power    Industry  
Forestry    Transport    Others

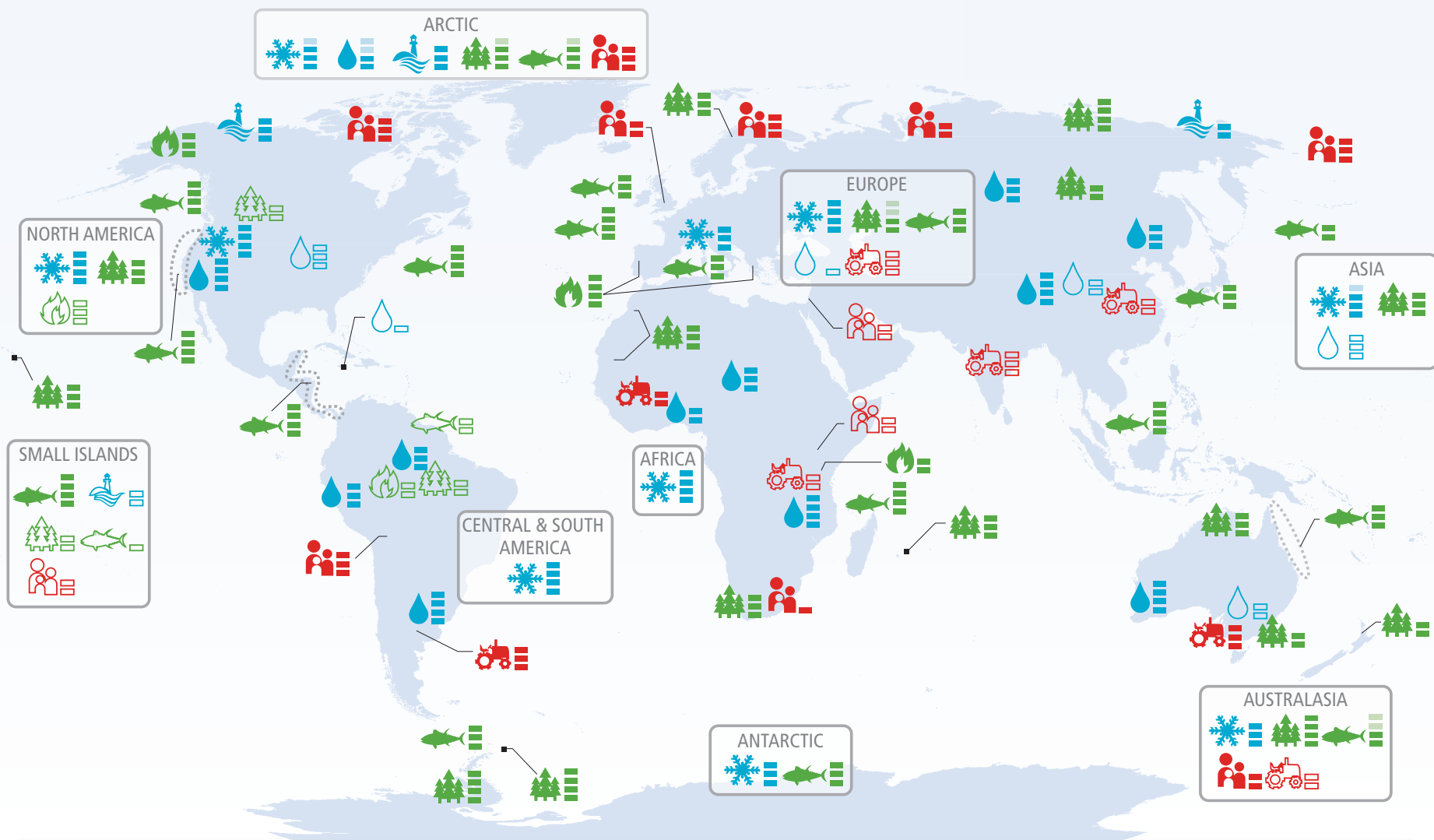


<sup>1</sup> Rounded numbers

<sup>2</sup> Currently estimated emissions from buildings and waste

# Knowledge issues

- Framing assessments in terms of development; not just climate
- Food security – integrates sectors
- Finance framing: market-based/other
- GHG figures –
- Resilience – new concept to link climate and development
- Modelling assumptions



#### Confidence in attribution to climate change



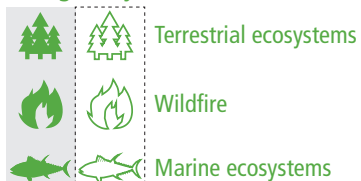
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# The Role of Modelling (be concrete)

- Critical across all WGs
  - Producing reliable simulations in Africa is major challenge largely due to lack of observations, and limited previous research.
  - AR5 - Presentation leaned toward an overview or “statistical” style –
  - Storylines are useful to make the link between the abstractions (world of modelling) and the narratives (the world of policy makers)
- Reliance for data from limited number of institutions – mostly Northern



# The Role of Reviewers for Authors

- What reviewers say matters
- Can influence the authors in their next order drafts
- Reviewers can bring (propose) new material for authors
- Scrutinize evidence, models and approaches – e.g.
- Can guide authors in proposing messages that are policy relevant; and how to present it (could be a partnership)



# Wider issues

- Reliance on other developing country experts
- Data and information and framing
- Who are the reviewers and plenary participants?
- Important issues for my country/region – without losing sight of the global issues and debates.



# Thank You for Your Attention!

- *Now: Q&As follow (15 minutes).*
- Registration for receiving feedback from presenters on your draft review comments will start
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