



Netherlands Environmental Assessment Agency

Assessing an IPCC assessment

An analysis of statements on projected regional impacts
in the 2007 report

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Background

- January 2010: Public turmoil about errors in IPCC report
- Dutch parliament
 - Credibility of the IPCC is at issue
- Parliamentary motion
 - Requests the PBL for update on climate science and implications of errors
- Minister for the Environment
 - Limit investigation to regional chapters and the Himalayan issue
- PBL – Netherlands Environmental Assessment Agency
 - February 2010: Start of investigation

Approach



Delimiting the investigation

- Media reported on errors in regional chapters of the Working Group II Report (impacts, adaptation, and vulnerability to climate change)
- Investigation focused on 8 regional chapters in Working Group II Report, and on carry-over in summary of the IPCC Synthesis Report
- Reports Working Groups I and III not investigated

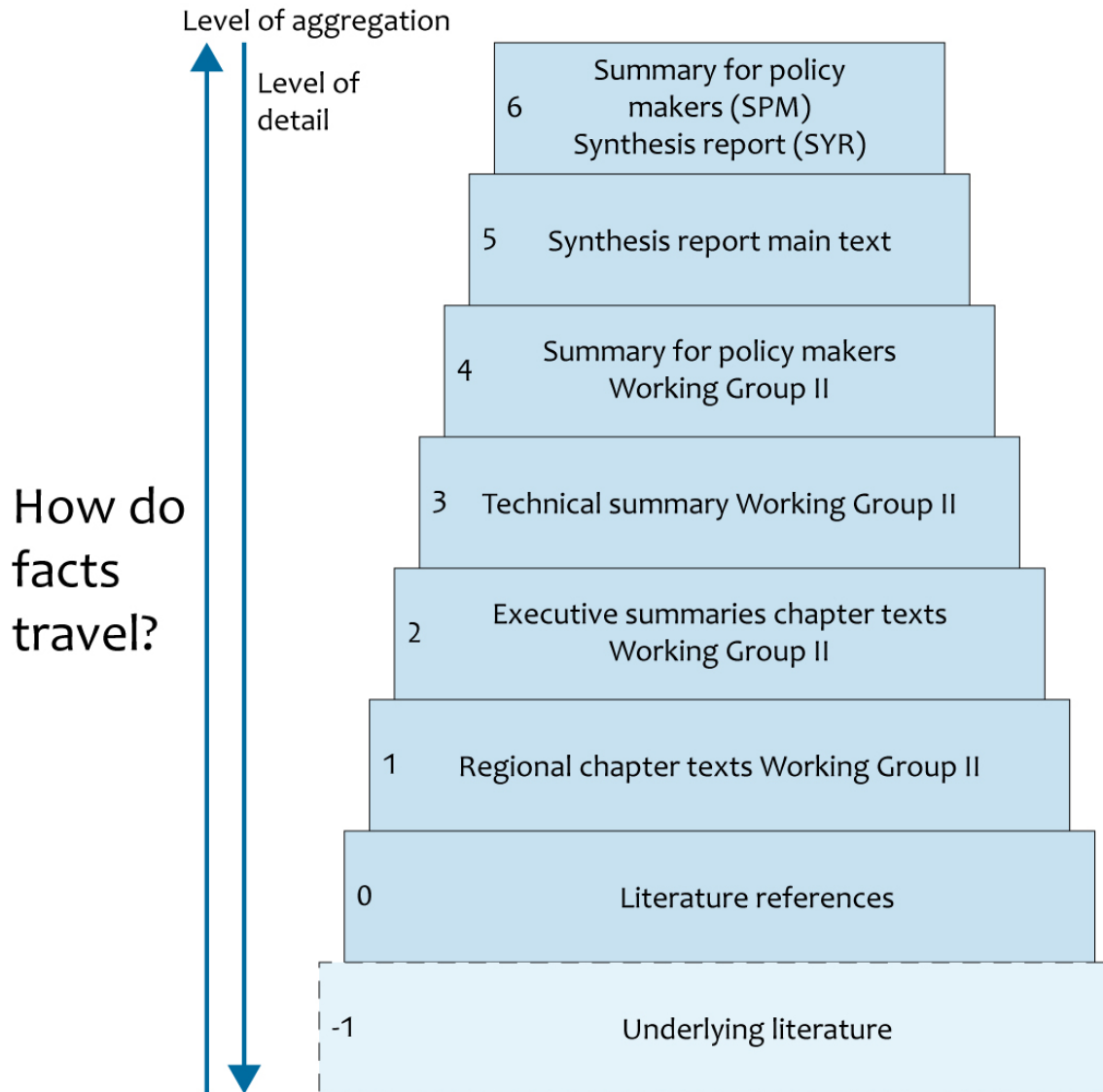
A. Structure of the Fourth Assessment Reports



The world regions

1. Africa
2. Asia
3. Australia and New Zealand
4. Europe
5. Latin America
6. North America
7. Polar regions
8. Small islands

B. Regional chapter analysis pyramid



Process: Openness, peer review, supervision

- Openness: PBL registration website for possible errors
 - 40 reactions in total; 3 of which relevant for our investigation
- Draw on IPCC authors to give feedback
- Internal and external peer review
- Independent supervision by KNAW

(KNAW: Royal Netherlands Academy of Arts and Sciences)

PBL method: errors and comments (1)

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Errors: in need of correction in Fourth Assessment Report

1. Inaccuracy of a statement
 - 1a) inaccuracy that can be corrected by an erratum
 - 1b) inaccuracy that requires new assessment

2. Inaccurate referencing

Comments: lessons to be learned for next report

1. Insufficiently substantiated attribution of impact to climate change
2. Insufficiently founded generalisation
3. Insufficiently transparent 'expert judgment'
4. Inconsistency of messages within report
5. Untraceable reference
6. Unnecessary reliance on grey referencing
7. Statements unavailable for review

IPCC: the nature of assessments

- The IPCC does not do research itself
 - The IPCC works with selected scientists who, together, are expected to cover a certain theme / knowledge area
- Essence: the supply of the best available knowledge in support of good political and administrative decision making
 - Science chooses its own issues for investigation; consequently the available scientific evidence differs from policy issue to policy issue
 - Weighing scientific literature is a matter of 'expert judgment'

Findings



Findings (1)

- PBL investigated 32 summary conclusions on regional impacts projections of climate change:
 - No significant errors
 - Comments on 3 conclusions
- In underlying chapters of Working Group II Report:
 - 1 new error (besides Himalayas and Dutch sea level);
 - 3 important comments

Findings (2)

- Errors found in underlying report do not influence summary conclusions
- General message about impacts and vulnerability has proved to be well founded
 - There are proven observations of regional impacts
 - Substantial risks under further increasing temperatures

Findings (3)

- The IPCC Working Group II approach was risk oriented
 - Summary conclusions mainly portray negative impacts
 - *Example:*
A potentially positive impact of climate change on forestry opportunities in North Asia was not included in the summary

Errors in detail – Synthesis Report

In summary ('Synthesis Report')

- Text reads:
 - 75 – 250 million people will experience water shortages in Africa, by 2020
- Should have been:
 - 90 – 220 million instead
- Factually incorrect but unsequential, due to given uncertainties

In chapters

- Error on Himalayan glaciers (Annex B)
- Error on Dutch sea level (Annex C)
- ‘Decrease in productivity in fisheries of 50 to 60%, due to extreme wind and sea-water turbulence’
 - The 50 to 60% refers to possible decrease in extreme wind and sea-water turbulence, not in catches. Effects on catches limited.

Comments on Summary for Policymakers (‘Synthesis Report’)

1. Possible yield decreases of 50%, for rain-fed agriculture in certain African countries, by 2020
 - Expert judgment poorly underpinned
2. Possible decrease in available fresh water in large parts of Asia
 - Generalisation: provenance of statement not well traceable
3. Possible decrease in productivity of livestock in Latin America
 - Generalisation: underpinning only available for cattle in certain countries

Comments on chapters and Technical Summary

Working Group II Report (1)

1. 'Projected increase in forest fires in North Asia'
 - Weak literature referencing; conclusion cannot be traced back to chapter

2. 'Projected increase of 3,000 to 5,000 heat-related deaths, annually by 2050, in Australia'
 - 'Attribution': only partly due to climate change

Comments on chapters and Technical Summary

Working Group II Report (2)

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3. 'Health effects in Europe: more negative than positive effects'
 - Expert judgment unclear: why do negative effects tip the balance?

4. 'Up to 40% of the Amazon Rainforest could react drastically to even a slight reduction in precipitation'
 - Underpinned by a reference to a peer-reviewed WWF/IUCN report of 2000 on forest fires. But peer-reviewed journal articles were available that were more relevant

Recommendations



Recommendations for Fifth IPCC report 2013 – 2014

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- Make foundations of summary conclusions more transparent
- Present full spectrum of regional impacts
- Invest more in quality control of entire IPCC process
- Invest more in knowledge capacity building

1. Make conclusion foundations more transparent

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- Clearly explain how summary conclusions are based on underlying material
- Be careful with making generalisations
- Discern between climate-change impacts and other impacts (such as population growth, prosperity, land use)

2. Present full spectrum of regional impacts (1)

- Correct the Fourth Assessment's focus on possible negative consequences in two ways
- The risk approach is as such certainly justifiable
 - Politics want to be informed of possible threats and disruptions
 - Society able to handle positive change, but in case of negative change, policy reaction is often required
 - Positive and negative consequences cannot be added up
 - *New agricultural opportunities in country X do little good in country Y*

2. Present full spectrum of regional impacts (2)

- Extend risk approach:
 1. Indicate role of factors other than those of climate change, also include any positive impacts
 2. Indicate 'worst-case' risks – small or unknown chances, large consequences
- This leads to more balanced overview of regional impacts on water, food, health, coastal zones and ecosystems

3. Invest more in quality control of entire IPCC process

- More thorough review, preceeding publication
- Paid assistants for quality control
- More active role for governments in review
- Set up registration desk for (alleged) errors, following publication

4. Invest more in knowledge capacity building

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In knowledge advancement, observations, models

- Knowledge on climate-change impacts spread unevenly around the world



Netherlands Environmental Assessment Agency

**For more information:
www.pbl.nl/en**

