

Climate Change 2013: The Physical Science Basis

Working Group I contribution to the IPCC Fifth Assessment Report

Experiences from the IPCC

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Facts About the WGI Contribution to IPCC AR5

- ❖ **209 Lead Authors** and 50 Review Editors from 39 countries
- ❖ **Over 600 Contributing Authors**
- ❖ **1535 pages** of assessment
- ❖ **More than 2 million gigabytes** of numerical data from climate models
- ❖ **Over 9200 scientific publications** cited
- ❖ **1089 expert reviewers** from 55 countries and 38 governments
- ❖ **54,677 review comments**
- ❖ **Panel, consisting of 195 member countries,** approved SPM and accepted report



Working Group I Fact Sheet

The Working Group I contribution to the IPCC Fifth Assessment Report (WGI AR5) provides the physical science basis of climate change. The report was developed by an international team of experts and was approved by the Working Group I members in May 2010. It went through a multi-stage review process involving expert reviewers and IPCC member governments for approval and acceptance in September 2013.

The Report

• 1 Scoping Meeting to outline 14 Chapters • Over 1000 nominations from 6 countries • 50 Review Editors from 39 countries • Over 600 Contributing Authors • Over 15 million gigabytes of numerical data from climate model simulations • Over 9200 scientific publications cited

The First Order Draft Expert Review

• Nearly 1500 individuals registered • 21,400 comments from 659 Expert Reviewers

The Second Order Draft Expert and Government Review

• Over 1500 individuals registered • 31,422 comments from 800 Expert Reviewers and 26 Governments

The Final Government Distribution

• 1855 comments from 32 Governments on the Final Draft Summary for Policymakers

Total Reviews

• 54,677 comments • 1089 Expert Reviewers from 55 countries • 38 Governments

The WGI Approval Session

• 23-27 September 2013, Stockholm, Sweden • The Summary for Policymakers was accepted by the Panel, which has 195 member Governments

Additional information is available from www.climatechange2013.org

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Would you be willing
to serve again?

Yes

68%

Rate your overall
experience

Good to
Excellent

90%

Amount of work was
a challenge

Agree to
strongly agree

83%

Dedicated assistance
should be standard

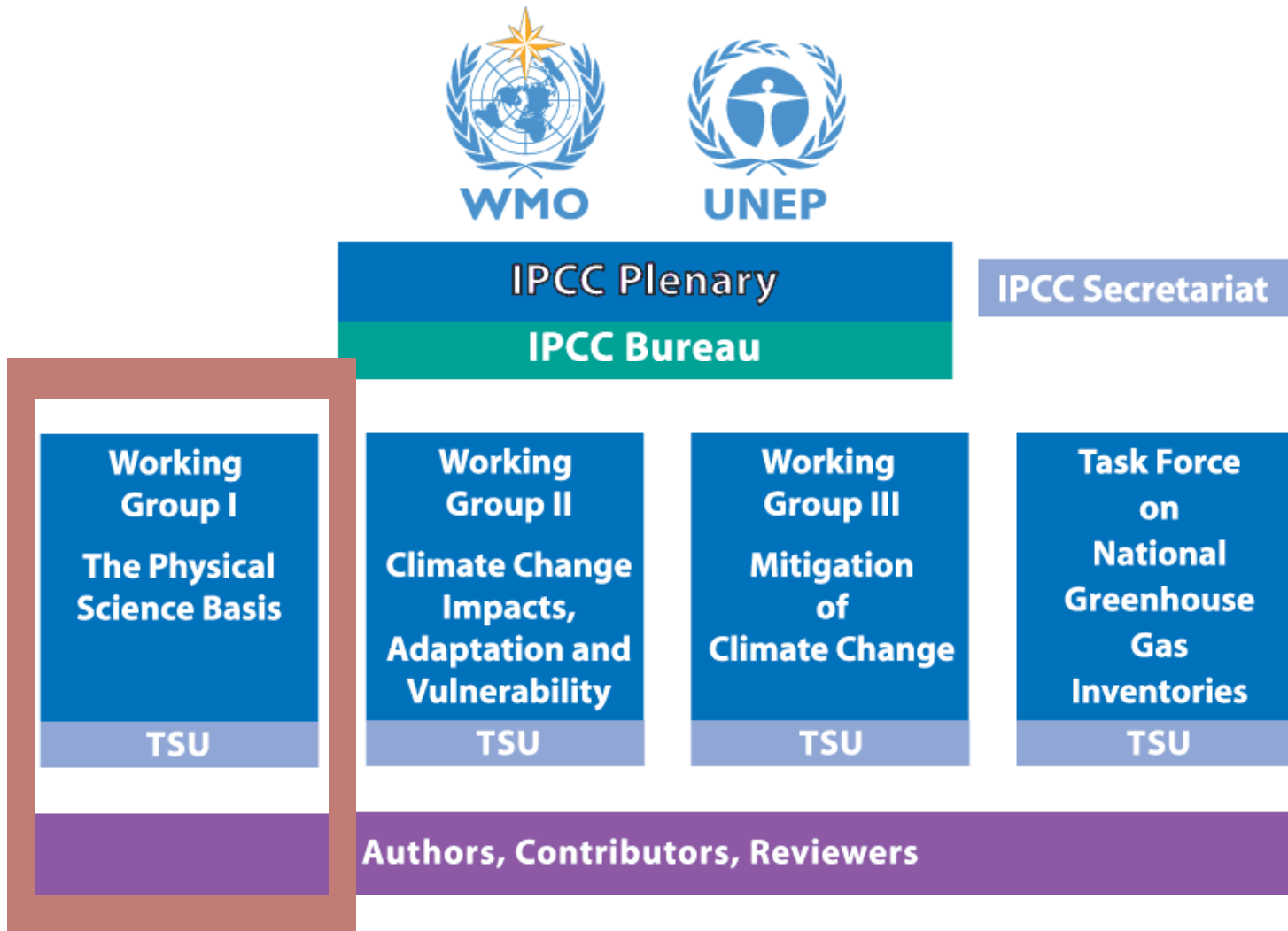
Agree to
strongly agree

80%

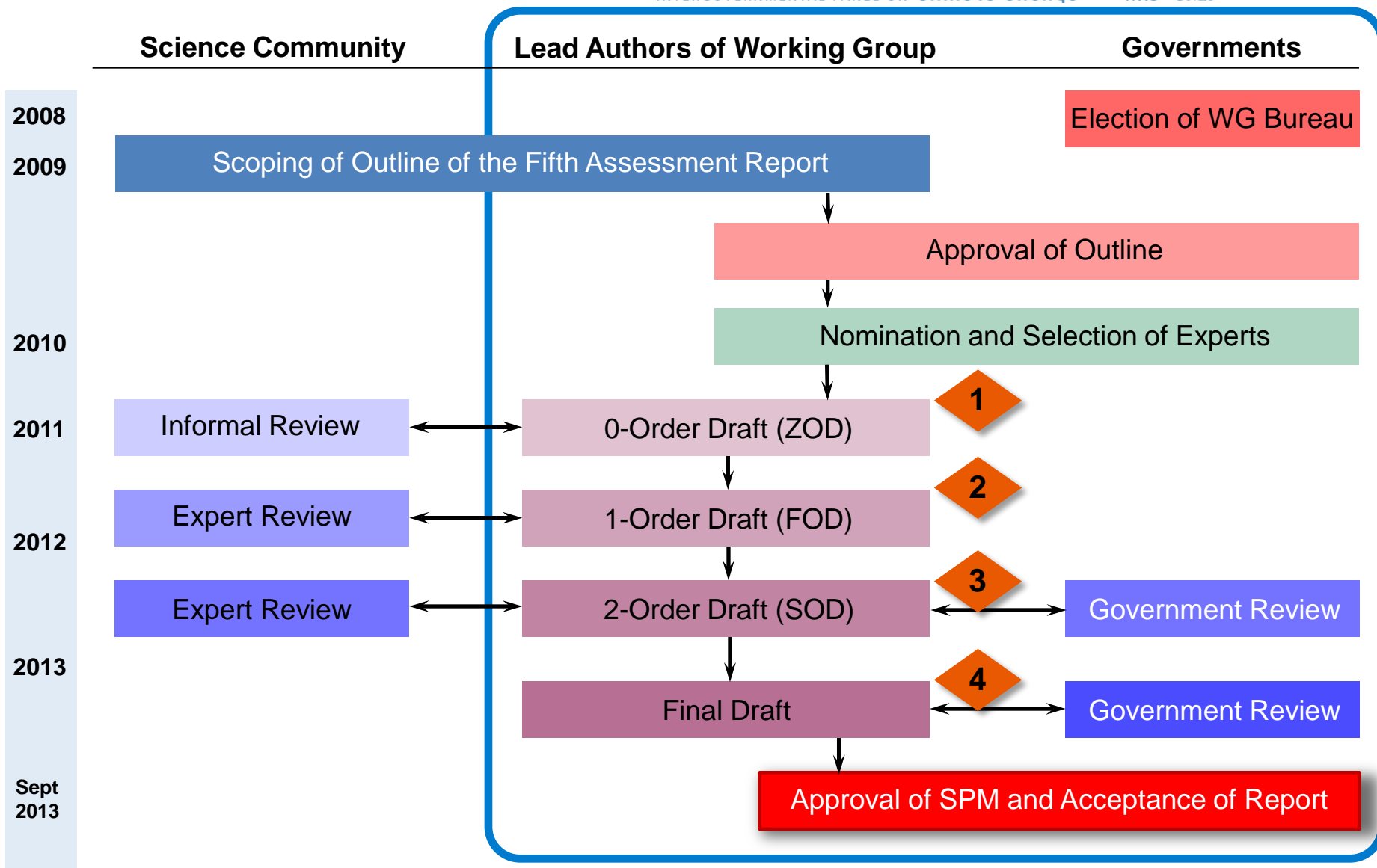
What is unique about the IPCC ?

- ❖ Intergovernmental Process
- ❖ International Collaboration
- ❖ Science Assessment...
- ❖ ...across Disciplines
- ❖ Science-Policy Interface

Intergovernmental Panel on Climate Change



IPCC Process (WGI):



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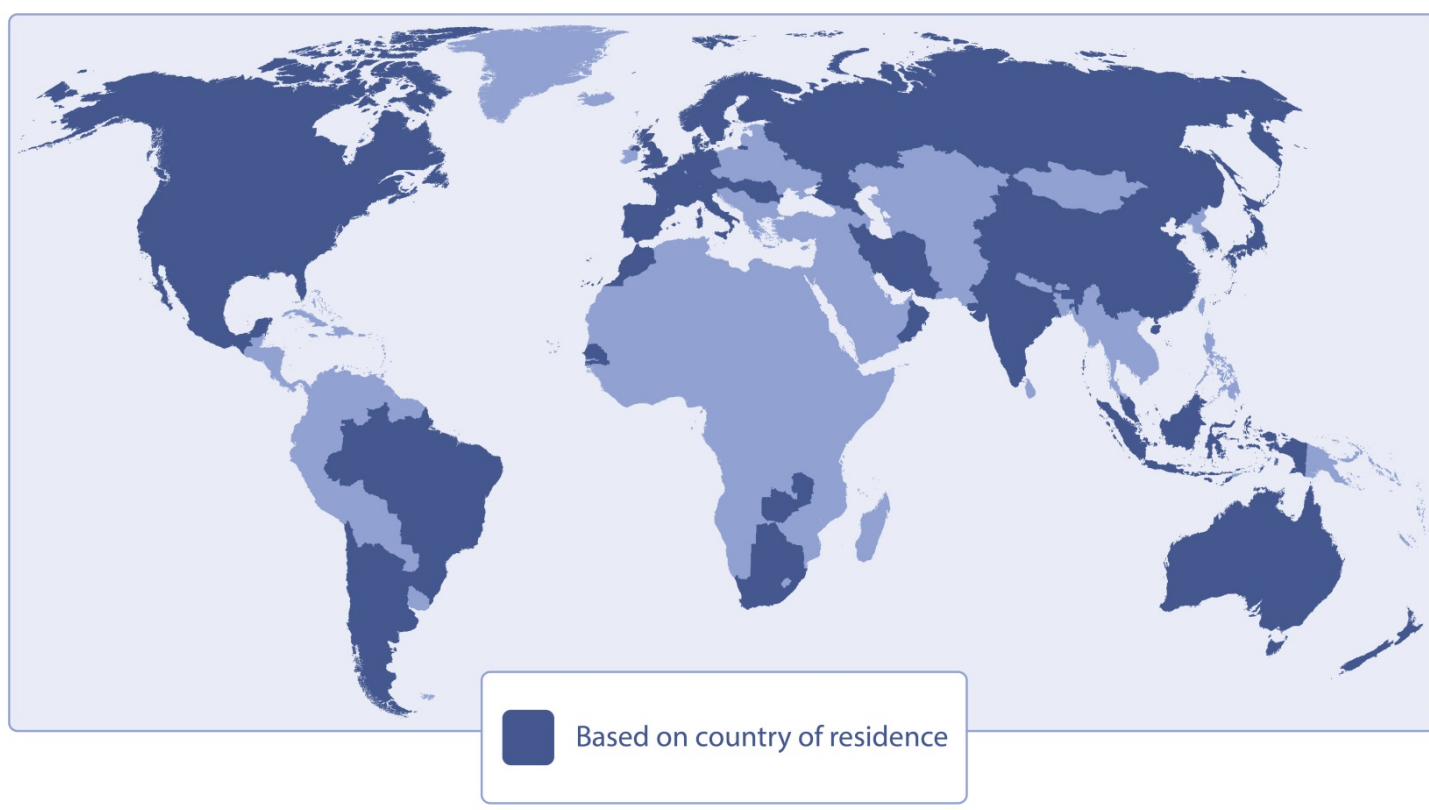
IPCC Working Group I Author Team

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Over 600 Contributing Authors from 32 countries



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„*This is an Assessment, not a Review*“ (Sir John Houghton)

- ❖ **Comprehensive but not exhaustive:** Not every publication ever written on climate change needs to be cited
- ❖ **Focus on progress** since ca. 2006 (cutoff for AR4) but provide context where necessary
- ❖ **Develop a consensus** on important issues within a chapter, identify areas where consensus cannot be reached
- ❖ Determine robustness of the assessment, make use of the **uncertainty language** (e.g., *very likely*)
- ❖ **Multiple lines of independent evidence** produce the most robust statements

What Are the Elements of the WGI Assessment Report?

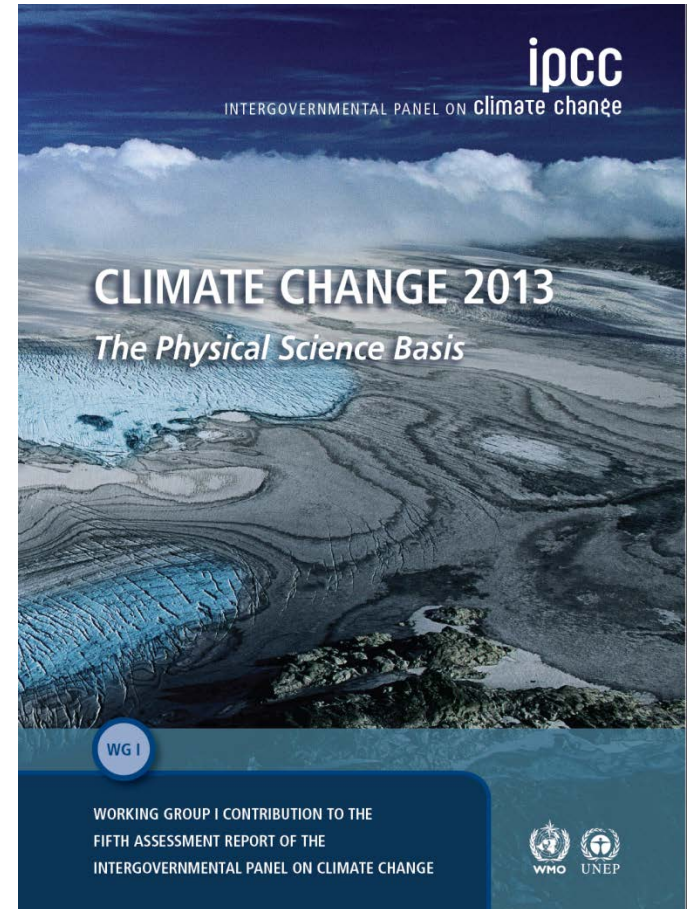
Report

14 Chapters, Annexes, Supplementary Material
Regional Projections in Digital Form
~1,100,000 words, 1535 pages

Technical Summary

Summary for Policymakers

Synthesis Report



What Are the Elements of the WGI Assessment Report?

Report

14 Chapters, Annexes, Supplementary Material
Regional Projections in Digital Form
~1,100,000 words, 1535 pages

Technical Summary

6 Sections, 9 Thematic Focus Elements
5,000 words, 81 pages

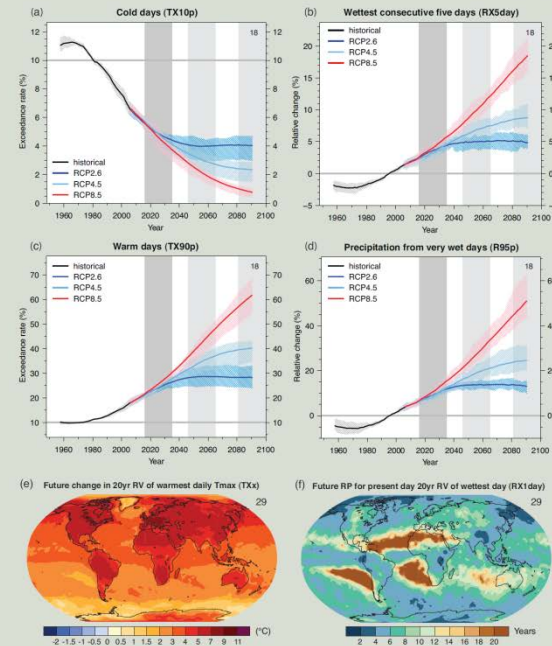
Summary for Policymakers

Synthesis Report

Technical Summary

TFE.9 (continued)

a different rate than the mean warming however, with several studies showing that projected European high-percentile summer temperatures will warm faster than mean temperatures. Future changes associated with the warming of temperature extremes in the long-term are *virtually certain* and scale with the strength of emissions scenario, that is, greater anthropogenic emissions correspond to greater warming of extremes (TFE.9, Figure 1). For high-emissions scenarios, it is *likely* that, in most land regions, a current 1-in-20-year maximum temperature event (continued on next page)



TFE.9, Figure 1 | Global projections of the occurrence of (a) cold days (TX10p)—percentage of days annually with daily maximum surface air temperature (Tmax) below the 10th percentile of Tmax for 1961 to 1990, (b) wettest consecutive 5 days (RX5day)—percentage change relative to 1986–2005 in annual maximum consecutive 5-day precipitation totals, (c) warm days (TX90p)—percentage of days annually with daily maximum surface air temperature (Tmax) exceeding the 90th percentile of Tmax for 1961 to 1990 and (d) very wet day precipitation (R95p)—percentage change relative to 1986–2005 of annual precipitation from days >95th percentile. Results are shown for CMIP5 for the RCP2.6, RCP4.5 and RCP8.5 scenarios. Solid lines indicate the ensemble median and shading indicates the interquartile spread between individual projections (25th and 75th percentiles). Maps show (e) the change from 1986–2005 to 2081–2100 in 20-year return values (RV) of daily maximum temperatures, Tx, and (f) the 2081–2100 return period (RP) for rare daily precipitation values, RX1day, that have a 20-year return period during 1986–2005. Both maps are based on the CMIP5 RCP8.5 scenario. The number of models used to calculate the multi-model mean is indicated in each panel. See Box 2.4, Table 1 for index definitions. (Figures 11.17, 12.14, 12.26, 12.27)

111

(IPCC 2013, Technical Summary)

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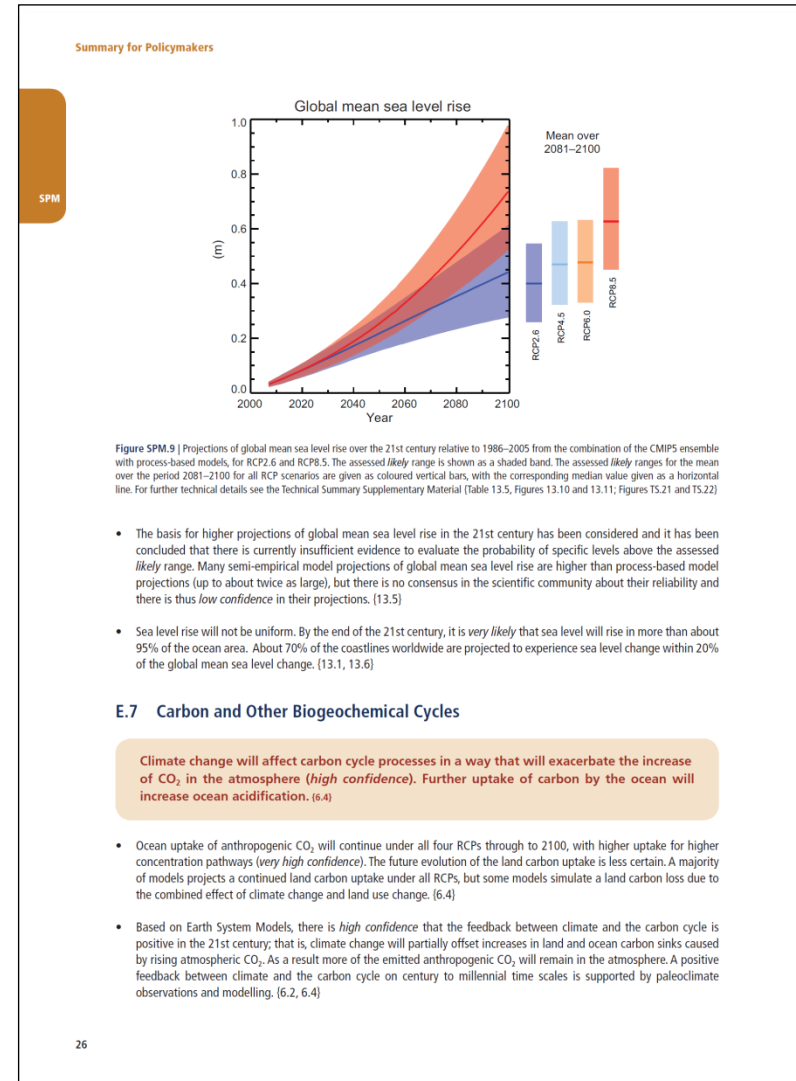
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Synthesis Report



(IPCC 2013, Summary for Policymakers)



**Preparatory SPM Author Meeting
Stockholm 20.-21.9.2013**



Warming in the climate system
is unequivocal, [...]

Human influence on the
climate system is clear.

Limiting climate change will require
substantial and sustained reductions of
greenhouse gas emissions.

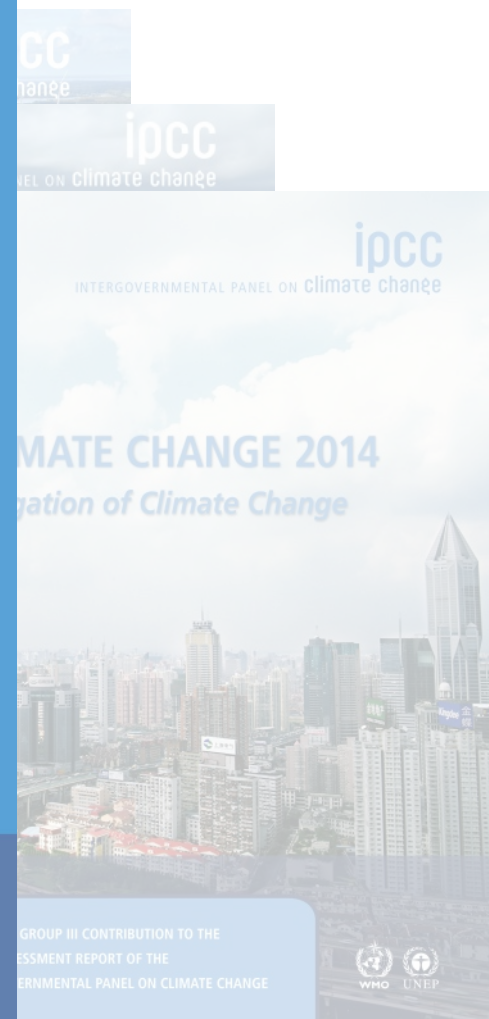
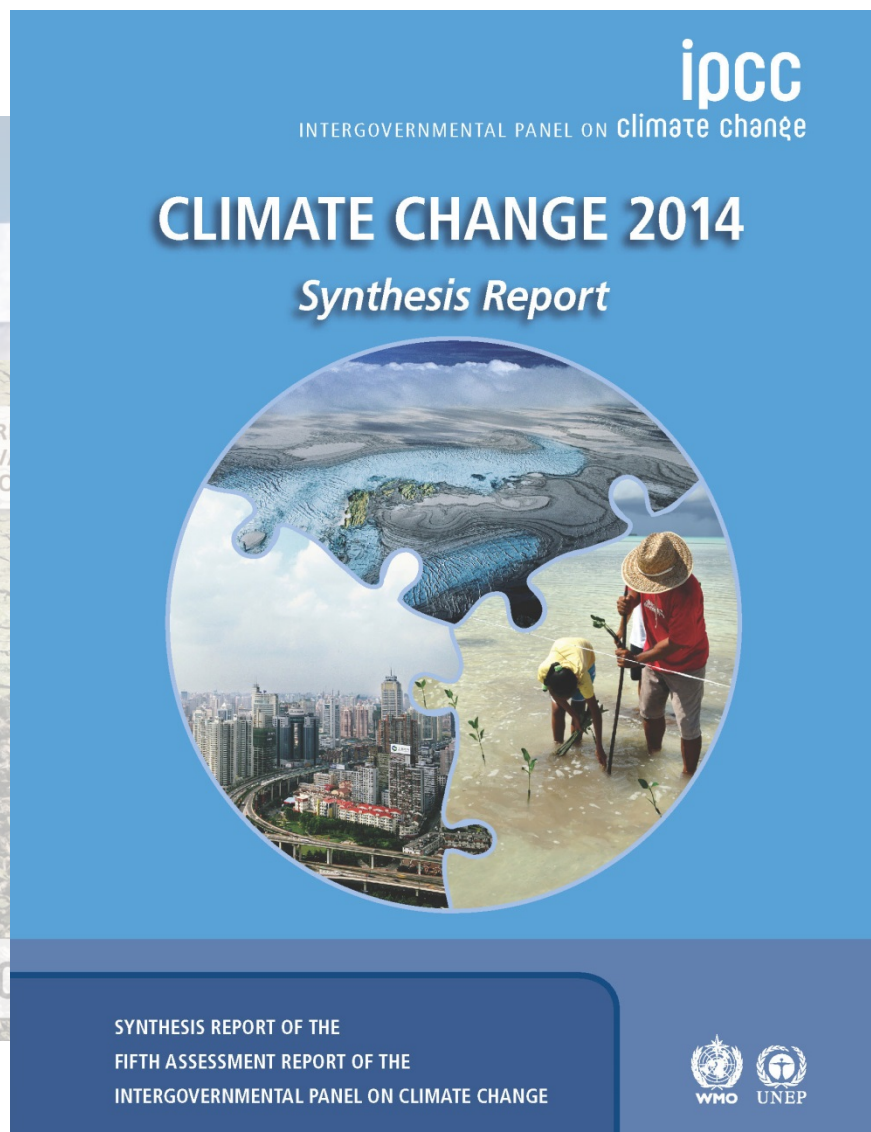
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The 5th IPCC Assessment Report 2008 - 2014



The 5th IPCC Assessment Report 2008 - 2014



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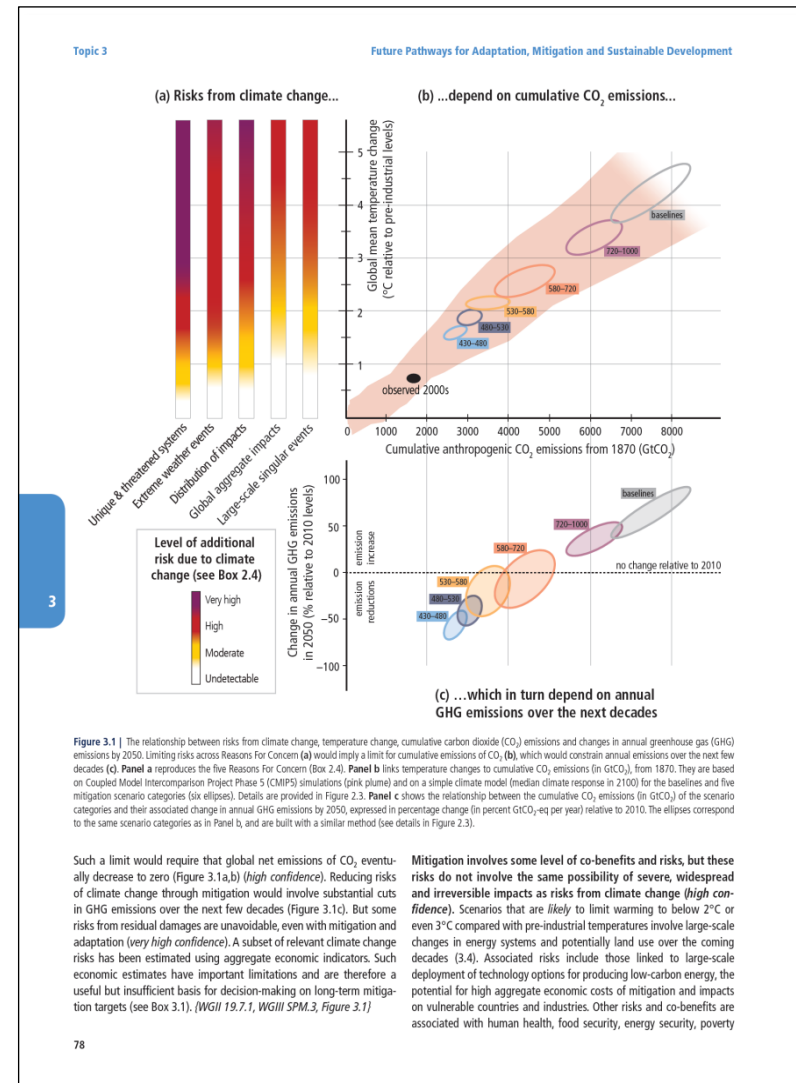
Summary for Policymakers

~14,000 words, 27 pages

Synthesis Report

all WGs contribute

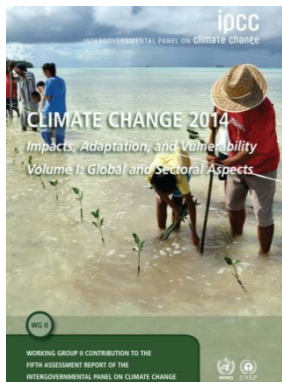
SPM 31 pages; Longer Report 77 pages



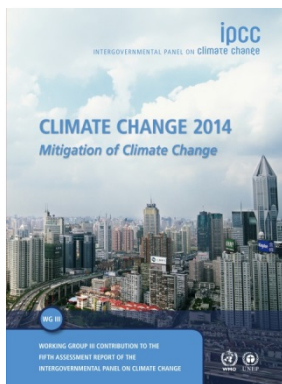
(IPCC 2014, Synthesis Report)



Human influence on the climate system is clear.



Changes in climate have caused impacts in natural and human systems.



Continued GHG emissions will cause further warming and amplify existing risks.

Multiple pathways exist to *likely* limit warming to below 2°C.

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IPCC Process (WGI):

Science Community

Lead Authors of Working Group

Governments

2008

Election of WG Bureau

2009

Scoping of Outline of the Fifth Assessment Report

Approval of Outline

2010

Nomination and Selection of Experts

2011

Informal Review

0-Order Draft (ZOD)

1

2012

Expert Review

1-Order Draft (FOD)

2

Expert Review

2-Order Draft (SOD)

3

Government Review

2013

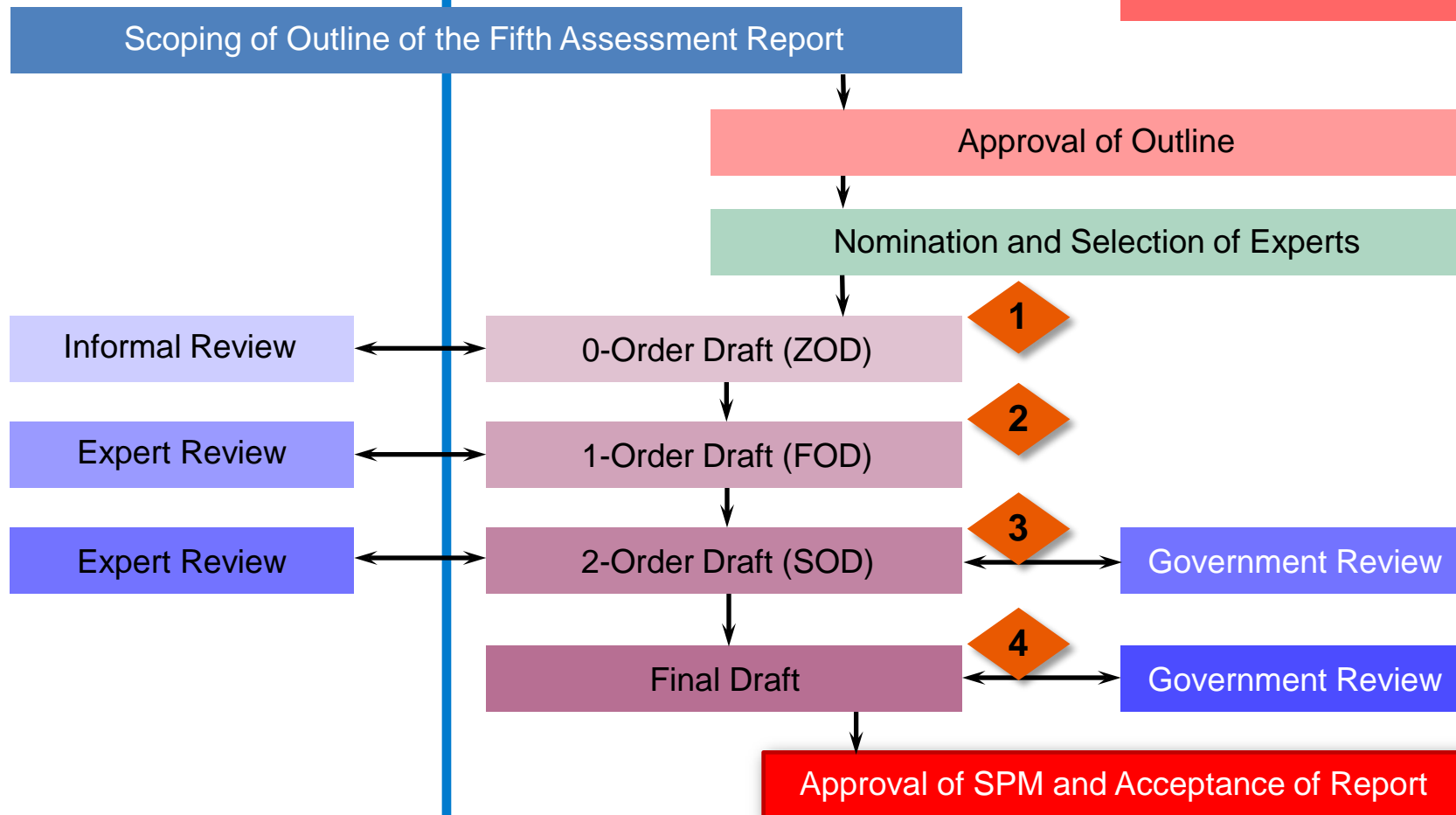
Final Draft

4

Government Review

Sept
2013

Approval of SPM and Acceptance of Report



WGI 12th Plenary, Opening Ceremony Stockholm 23.9.2013



WGI 12th Plenary: Explaining the structure of the SPM



Twelfth Session of IPCC Working Group I
23-26 September 2013 • Stockholm, Sweden



(Photo Credit: Johannes Frandsen, www.johannesfrandsen.com)

**WGI 12th Plenary:
Many questions, many good ideas ...**



**WGI 12th Plenary:
Finally, a sentence approved**





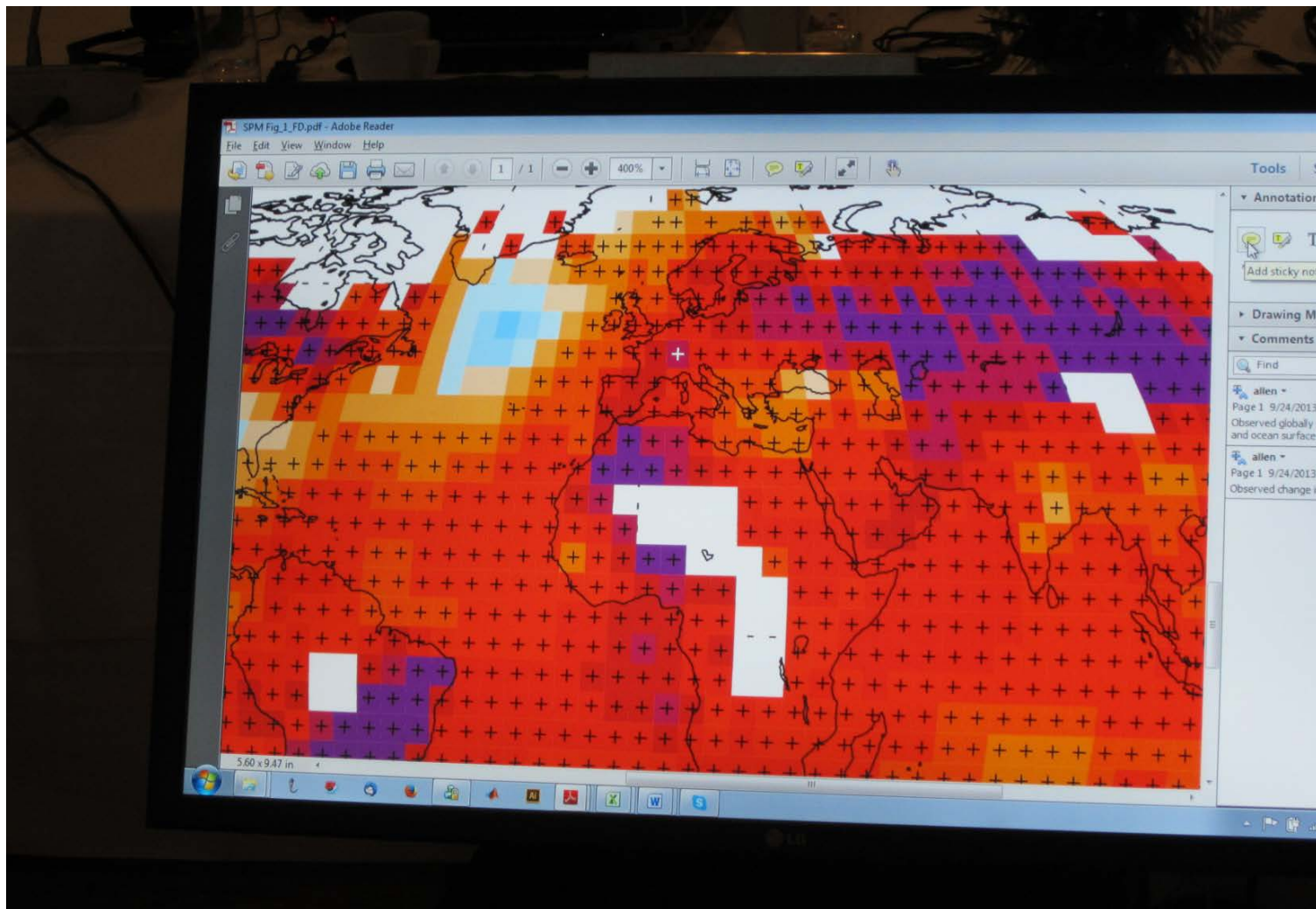
**WGI 12th Plenary:
"I had my flag up!!!"**

**WGI 12th Plenary:
"The distinguished colleague is
absolutely right! "**



(Photo Credit: ENB, <http://www.iisd.ca/climate/ipcc36/>)

WGI 12th Plenary:
Some delegates have very sharp eyes ...



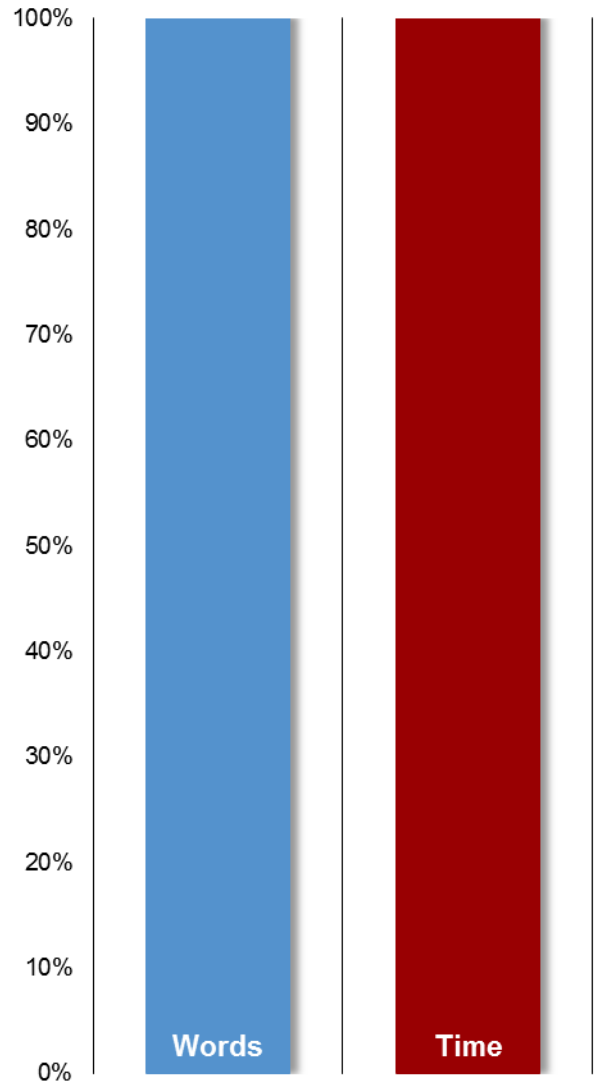


(Photo Credit: ENB, <http://www.iisd.ca/climate/ipcc36/>)



**WGI 12th Plenary:
Still not convinced ...**

Performance Meter



Friday, 27 September 2013
04:58 CET



Friday – End of Twelfth Session of WG I

This is unique about the IPCC !

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Would you be willing
to serve again?

Yes

68%

Rate your overall
experience

Good to
Excellent

90%

Amount of work was
a challenge

Agree to
strongly agree

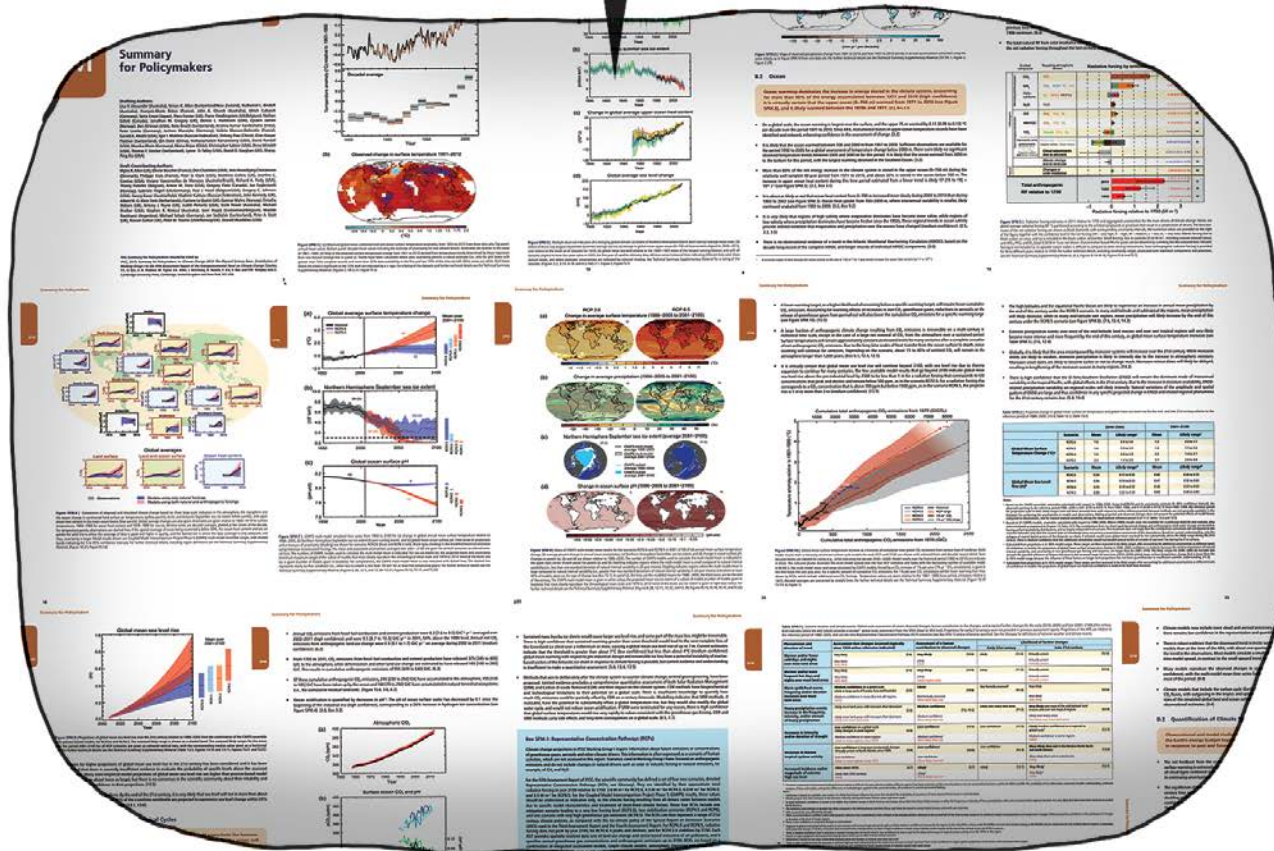
83%

Dedicated assistance
should be standard

Agree to
strongly agree

80%

THE ARGUMENT FOR TAKING IMMEDIATE ACTION ON CLIMATE CHANGE AND GLOBAL WARMING.



THE ARGUMENT AGAINST.

IT SNOWED AT MY HOUSE IN APRIL.

JOHN COLE
CHRISTIAN TRIBUNE
SCRANTON, PA
COLECARICONS.COM



www.climatechange2013.org

