

WORKING GROUP I CONTRIBUTION TO THE IPCC SIXTH ASSESSMENT REPORT

FIRST LEAD AUTHOR MEETING

GUANGZHOU, CHINA, 25-29 JUNE 2018



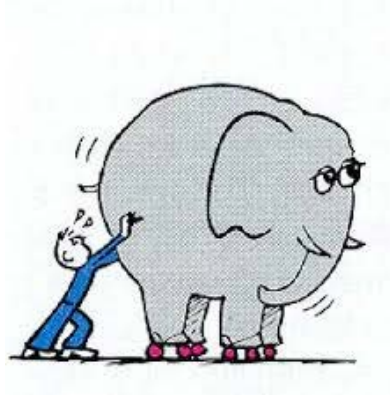
# The Intergovernmental Panel on Climate Change Sixth assessment cycle: brief overview and opportunities for the CLM community

Alessandro Dosio, EC Joint Research Centre  
(with many thanks to Wilfran Moufouma-Okia)

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# The big machine has started moving...



## ...and things will develop surprisingly fast...



**1) What is the IPCC and how does it work?**

**2) How can the CLM community contribute to the AR6?**

The Intergovernmental Panel on Climate Change (IPCC) is the UN body for assessing the science related to climate change.



**IPCC role:**

*“... to assess (not review)*

*on a comprehensive, objective, open and transparent basis*

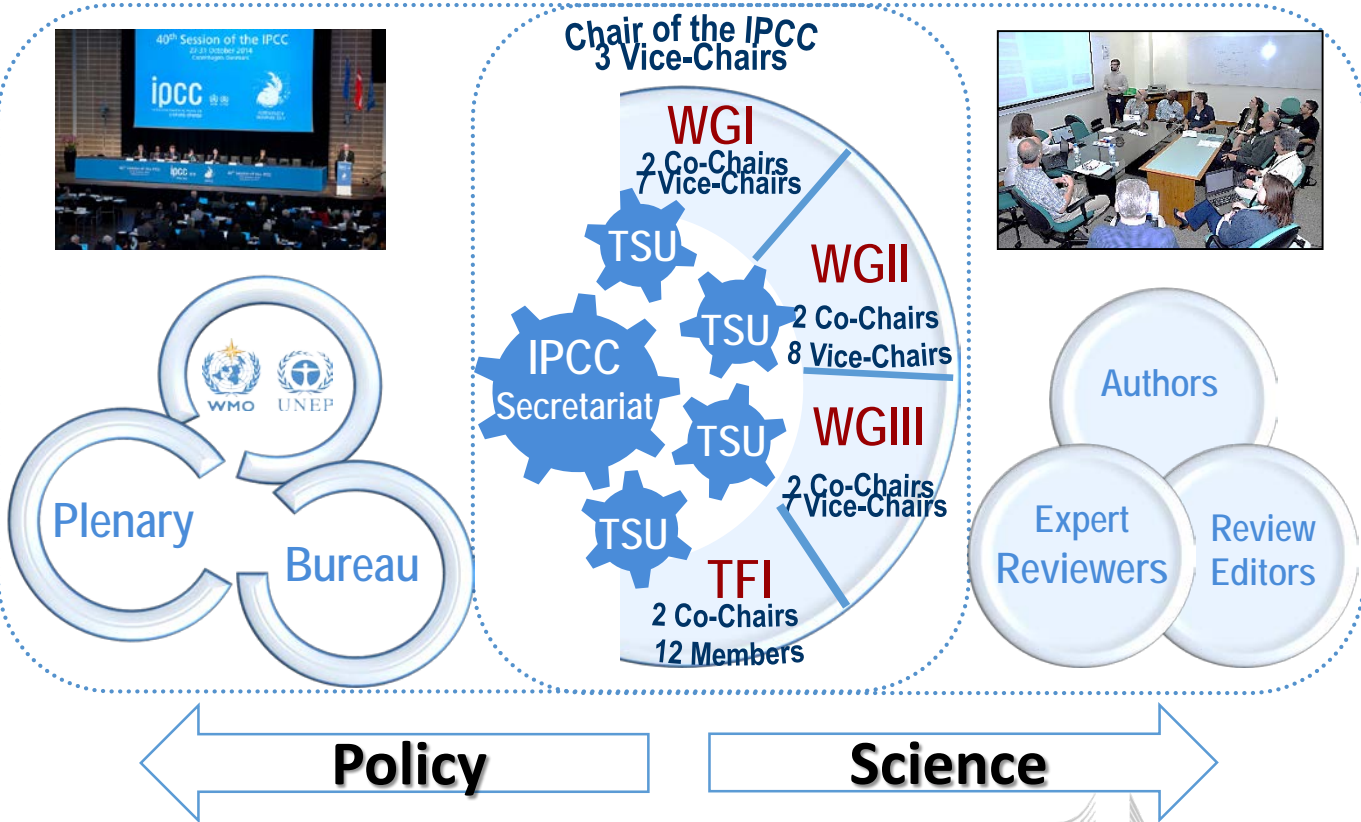
*the scientific, technical and socio-economic information relevant to understanding*

*the scientific basis of risk of human-induced climate change, (WGI)  
its potential impacts (WGII)  
and options for adaptation and mitigation. (WGIII)”*

**Policy relevant but not policy prescriptive**



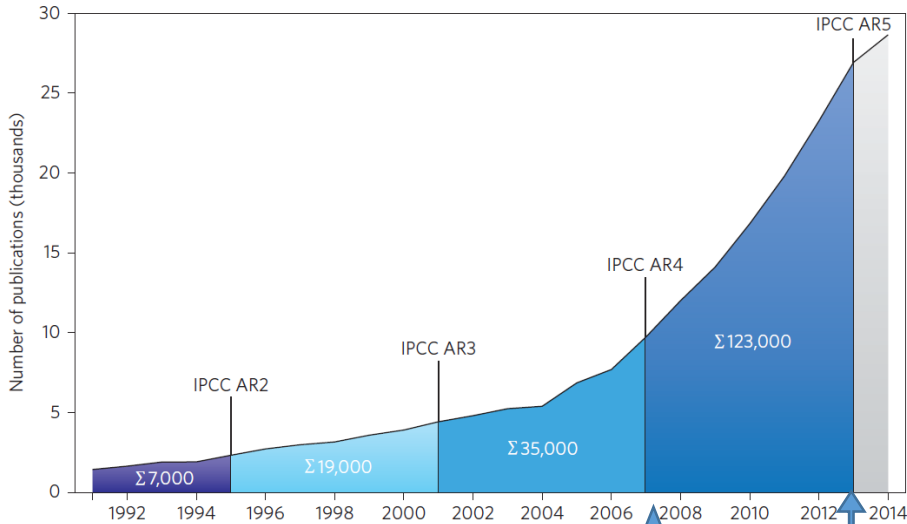
# IPCC structure



# The report

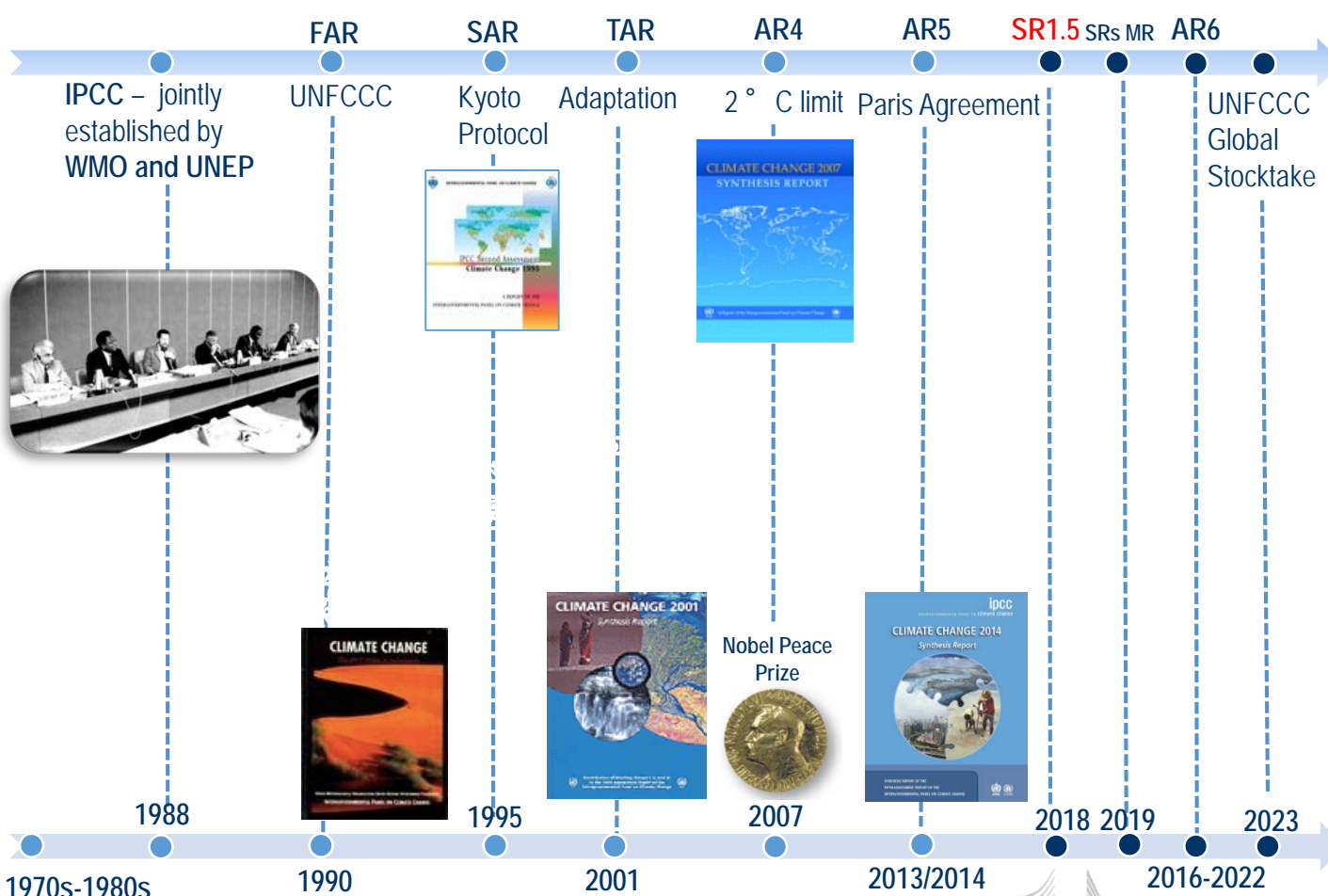


# Publications on Climate Change



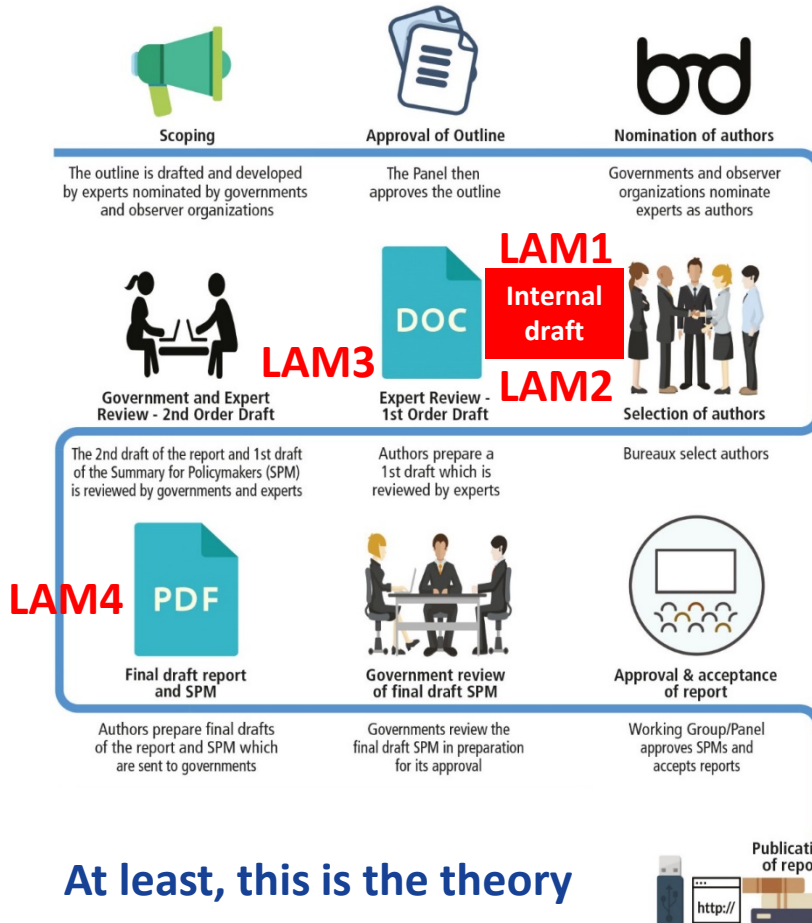
...proportional to the thickness  
of the report?





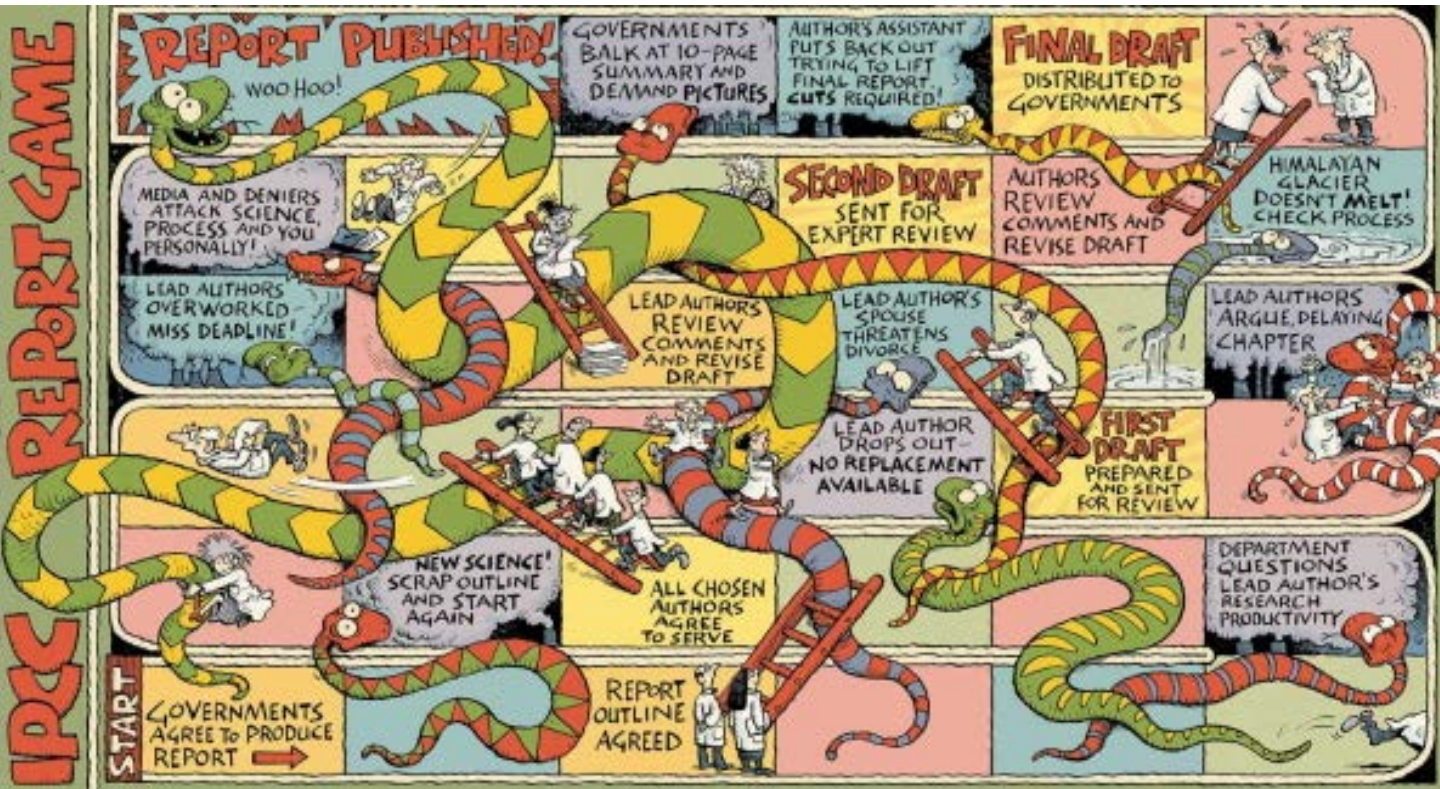


# IPCC reports production cycle



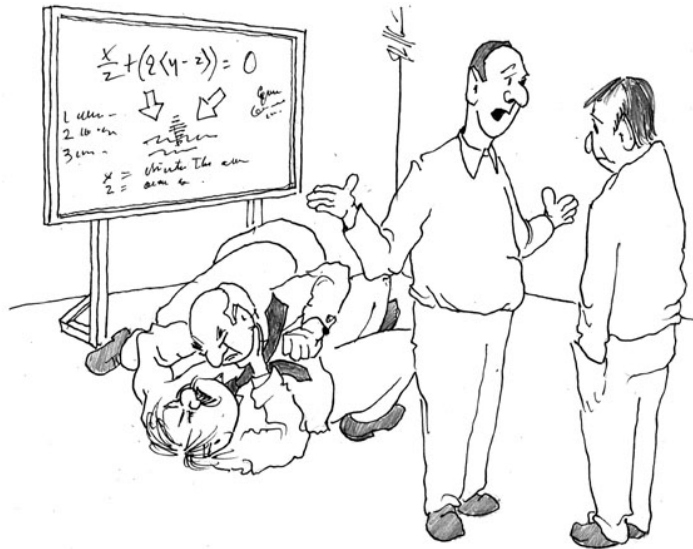
At least, this is the theory

# The reality may be slightly different...



# The chapter teams

Copyright 2009 John Crowther



*“Hey, that’s scientists for you. Keswick and Murphy just can’t seem to agree on the cause of global warming.”*

# Chapter teams – CLAs, LAs, REs

Coordinating Lead Authors (CLAs)

Lead Authors (LAs)

Review Editors (REs)

Contributing Authors (CA)

Chapter Scientists (CS)

## CLAs

- usually more experienced scientists and practitioners with previous IPCC experience
- responsible for major sections of the report

## LAs

- Usually a mix of IPCC-experienced and authors new to the IPCC
- LAs are collectively responsible for content of a chapter

## REs

- ensure comments from the review process are taken into consideration by the team
- Attend LAM3-4

# Chapter teams – CAs

Coordinating Lead Authors (CLAs)

Lead Authors (LAs)

Review Editors (REs)

Contributing Authors (CA)

Chapter Scientists (CS)

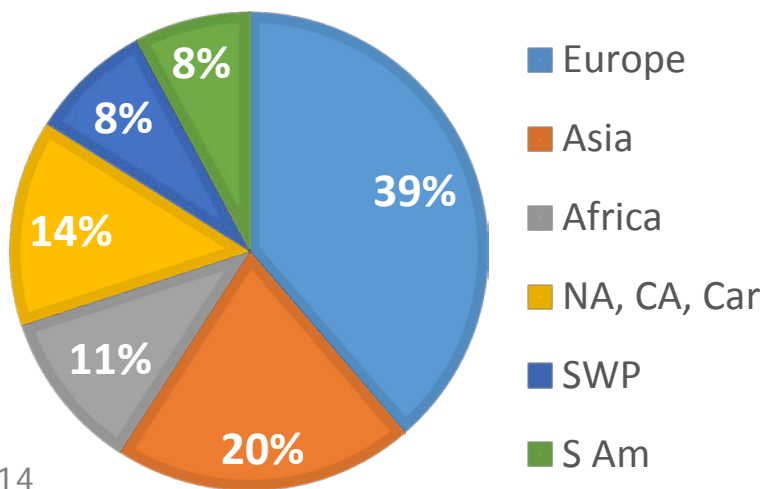
## Contributions

- Solicited by LAs to fill specific gaps in expertise and ensure a range of views are represented
- Work on sections of chapters

Prepare technical information in the form of text, graphs or data

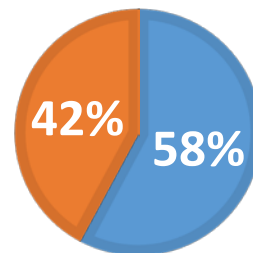
# WGI authors selection

	AR6 nominated		AR6 selected		AR5 selected	
Total	911	100%	<b>230</b>	<b>25%</b>	255	26%
DC/EIT	362	42%	<b>97</b>	<b>42%</b>	60	23%
Female	227	25%	<b>63</b>	<b>27%</b>	47	18%
New	689	76%	<b>142</b>	<b>62%</b>	167	65%



## DEVELOPED VS DEVELOPING

■ Developed ■ Developing



# Chapter 10 team



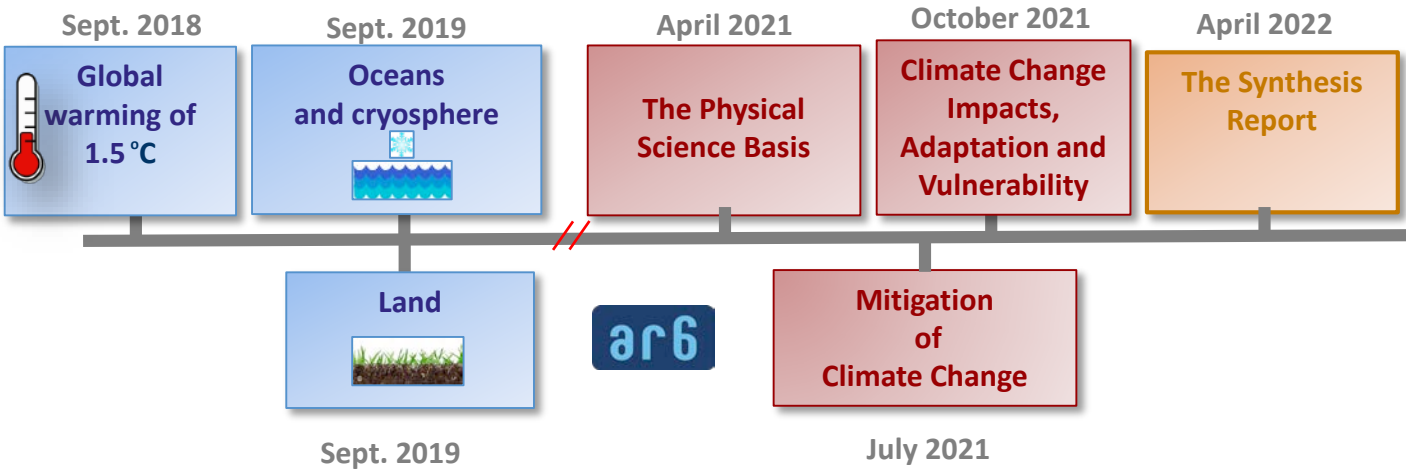
<b>DOBLAS-REYES</b>	<b>Francisco</b>	CLA	Spain
<b>HEWITSON</b>	<b>Bruce</b>	CLA	South Africa
<b>ALMAZROUI</b>	<b>Mansour</b>	LA	Saudi Arabia
<b>DOSIO</b>	<b>Alessandro</b>	LA	Italy
<b>GUTOWSKI</b>	<b>William</b>	LA	USA
<b>HAARMSA</b>	<b>Rein</b>	LA	Netherlands
<b>HAMDI</b>	<b>Rafiq</b>	LA	Belgium
<b>KWON</b>	<b>Won-tae</b>	LA	Republic of Korea
<b>LAMPTEY</b>	<b>Benjamin L.</b>	LA	Ghana
<b>MARAUN</b>	<b>Douglas</b>	LA	Germany
<b>SÖRENSSON</b>	<b>Anna Amelia</b>	LA	Argentina
<b>STEPHENSON</b>	<b>Tannecia</b>	LA	Jamaica
<b>TAKAYABU</b>	<b>Izuru</b>	LA	Japan
<b>TERRAY</b>	<b>Laurent</b>	LA	France
<b>TURNER</b>	<b>Andrew</b>	LA	UK
<b>ZUO</b>	<b>Zhiyan</b>	LA	China
<b>FLATO</b>	<b>Gregory</b>	RE	Canada
<b>TANGANG</b>	<b>Fredolin</b>	RE	Malaysia
<b>TARIQ</b>	<b>Muhammad Irfan</b>	RE	Pakistan

# The timeline





# AR6 timeline and products



# AR6 WGI timeline

2018

**JUNE** 25 June-1 September  
First Lead Author Meeting (LAM1)

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**OCT** 14 October  
Submission of the Internal Draft to the TSU

15-28 October  
TSU compile Internal Draft

29 October - 25 November  
Internal Review of the Internal Draft

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**DEC** 3 December  
TSU sends compiled Review Comments to CLAs

**JAN** 7-12 January  
Second Lead Author Meeting (LAM2)

**APRIL** 7 April  
Submission of the First Order Draft (FOD) to TSU

8-21 April  
TSU compiles FOD

29 April - 23 June  
Expert Review of FOD

**JULY** 1 July  
TSU sends compiled Review Comments to CLAs

**AUG** 26-31 August  
Third Lead Author Meeting (LAM3)

**OCT** 7 October  
Comment responses & RE First interim report due to TSU

2019

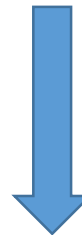
18

Dec 30 : cut-off date for submitted manuscripts cited in the Second Order Draft

European Commission

2020

JAN	12 January Submission of the Second Order Draft (SOD) to TSU 13-26 January TSU compile SOD
MAR	2 March - 26 April Expert and Government Review of the SOD and of the FOD of the Summary for Policy Makers (SPM)
MAY	4 May TSU send compiled Review Comments to CLAs
JUNE	1-6 June Fourth Lead Author Meeting (LAM4) 29 June RE second Interim report due to TSU
JULY	27 July SOD Review Comments response due to TSU
OCT	18 October Submission of the Final Draft (FGD) to TSU 19 October - 1 November TSU compiles FGD
DEC	7 December - 31 January Final Government Distribution
FEB	8 February TSU send compiled Review Comments to SPM Drafting Team
APR	12-16 April IPCC 54 - Approval Session

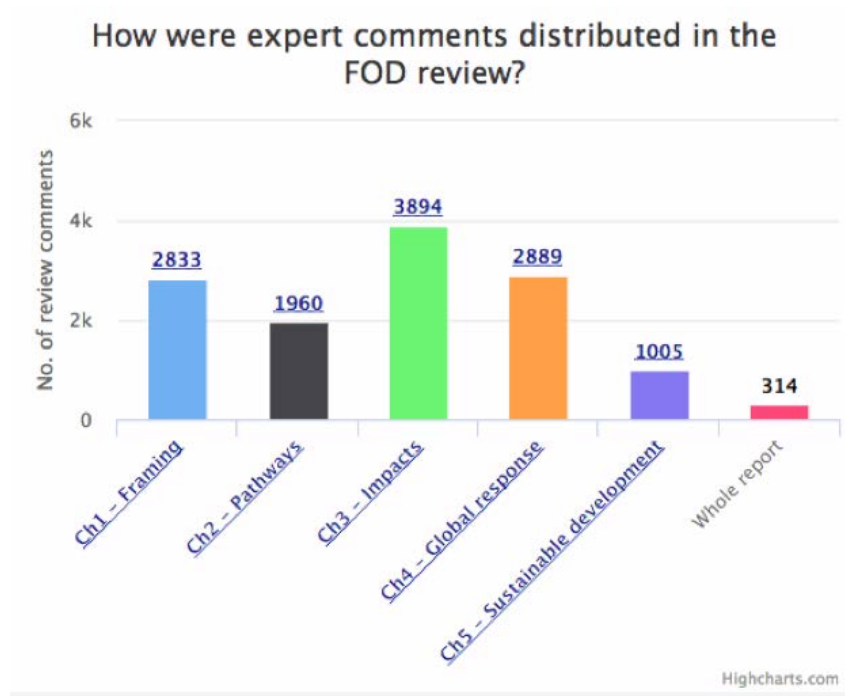


Sept 30 : cut-off date for accepted papers cited in the Final Draft

2021

**If this does not seem  
complicated  
enough....**

# Number of comments in the SR1.5 FOD



...each one of them must be taken care of!



The 'Summary for Policymakers' is approved by the IPCC member countries (in consultation with the authors) after a detailed, line-by-line (!) discussion.

The 'Assessment Report' is accepted by the responsible Working Group, together with the government representatives after the SPM is approved.

# The content



Summary for Policy Makers

Technical Summary

## Large-scale climate change

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 forcings

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

Annexes incl. a Regional Atlas and Technical Annexes

Glossary



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Climate processes



# Approved WGI Outline

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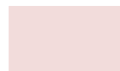
Regional climate  
information

Annexes incl. a Regional Atlas and Technical Annexes

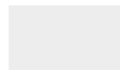
Glossary

Summary for Policy Makers

Technical Summary



Link to WGII



Link to WGIII

Chapter 1: Framing, context, methods

Chapter 2: Changing state of the climate system

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Annexes including a **Regional Atlas** and Technical Annexes

Glossary

Index

- **Regional climate projections and impacts**

(WGI ch 4, 10, 11, 12, Atlas / WGII across most chapters, Atlas / WGIII ch 1, 7, 12, 17 / SR15 ch 3 / SRCCL ch 3-5 / SROCC)

- **Carbon budgets**

(WGI ch 4, 5 / WGIII ch 2, 3, 4 / SR15 ch 2 / SRCCL ch 6)

- **Non-CO2 components**; radiative forcing, emission metrics

(WGI ch 4, 6, 7 / WGII ch 6,7 / WGIII ch 2, 3, 4, 7 / SR15 ch 1, 2 / SRCCL ch 2).

- **Scenarios and mitigation pathways**

(WGI ch 1, 4, and through following chapters / WGII ch 1, 16 (and most others) / WGIII ch 3

- **Carbon Dioxide Removal (CDR)** (incl. BECCS, competition for land, associated risks)

(WGI ch 4, 5 / WGII ch 2-5 / WGIII 3, 6, 7,11,12 / SR15 ch 2-5 / SRCCL ch 2, 3, 5, 6, 7 / SROCC ch 5)

- **Carbon capture and storage / Carbon use**

(WGI ch 4, 5 / WGII ch 5 / WGIII 3, 6, 7, 9, 11 / SR15 ch 4, 5 / SRCCL ch 2, 6 / SROCC ch 5)

- **Short-lived climate forcers (SLCF) and Air Quality (AQ)**

(WGI ch 4, 6, 7 / WGII ch 6, 7 / WGIII 3, 4, 13, 16 / SR15 ch 2, 5 / SRCCL ch 2, 6, TFI expert meeting)

- **Treatment and evaluation of uncertainty**

(WGI ch 1 / WGII ch 1 / WGIII ch 1 / SR15 ch 1 / SRCCL ch1 / SROCC ch1, but effectively all chapters, TFI 2019 vol 1)

- **Detection and attribution**

(WGI ch 3, 9, 10, 11 / WG II ch 1-8, 16 / WGIII ch 2 / SR15 ch 3 / SRCCL ch 3, 4, 5 / SROCC ch 1, 4)

# 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 impact 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 emissions

### Frequently Asked Questions

# A sneaky preview of Ch. 10 structure





# Chapter 10:

## Linking global to regional climate change

### Executive Summary

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### Frequently Asked Questions

## Climate phenomena / process

Connecting global modes to regions (Natural versus forced variability,

Regional drivers; land surface, aerosols, etc., Time of emergence)

Polar, mid-latitude, and tropical modes and processes

Co-behaviour of multi-scale phenomena

Regional process change attribution

## Methods toward constructing regional information

Global Models (including High resolution and variable resolution GCMs)

Regional Climate Models

Statistical techniques

Scale specific methodologies; urban, mountain, coastal, catchment

## Issues inherent in developing regional information

Model evaluation (incl. simulation of observed trends)

Model independency

Constraining projections by observations

Model weighting

Bias correction

Added value

# How can you contribute?



**Directly -> being a contributing author (on invitation) and expert reviewer**

**Indirectly -> having your work included in AR6**

Go through the AR6 WGI (II-III) chapters outline and see where your work can fit

Try to be innovative, targeted and (policy-)relevant (title, keywords, co-authors...)

Try to publish on (highly) visible journals (avoid at all costs 'Predatory journals').

Gray literature can be used in AR6 but peer-reviewed works are preferred.

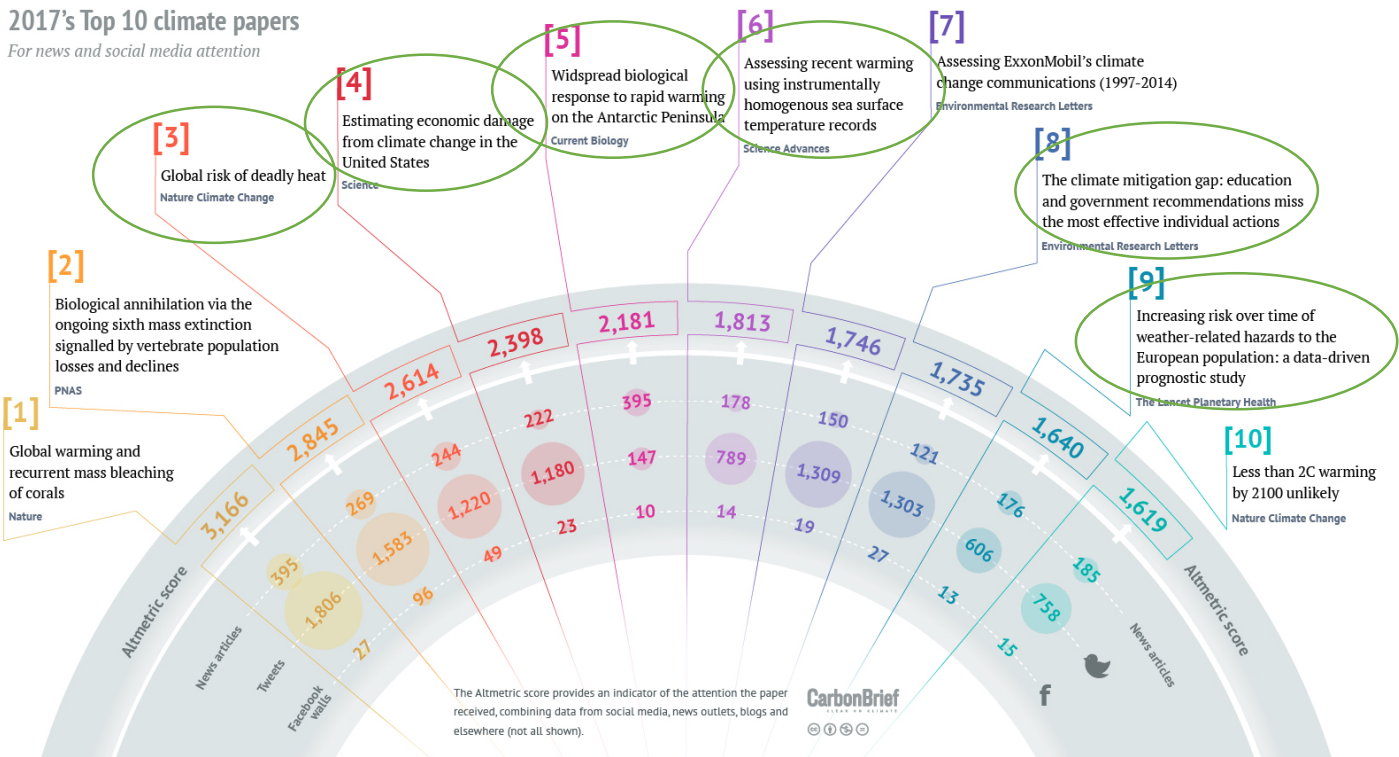
Remember deadlines for submission (Dec 30th 2019): late papers will not be considered -> try to avoid writing a paper during the last week before cut-off date and submit on the last day (midnight, actually) (personal experience).

You can send your submitted work to IPCC for consideration. However, if it is not accepted, the information will be removed from the report.

# Climate papers most featured in the media - 2017

## 2017's Top 10 climate papers

For news and social media attention



# Thank you for your attention

1990

SO, THIS CLIMATE CHANGE THING COULD BE A PROBLEM...



1995

CLIMATE CHANGE: DEFINITELY A PROBLEM.



2001

YEP, WE SHOULD REALLY BE GETTING ON WITH SORTING THIS OUT PRETTY SOON...



2007

LOOK, SORRY TO SOUND LIKE A BROKEN RECORD HERE...



2013

WE REALLY HAVE CHECKED AND WE'RE NOT MAKING THIS UP.



2019

IS THIS THING ON?

