United Nations Framework Convention on Climate Change

Needs for data and climate observations emerging under the 2013-2105 review

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Warsaw, Poland, 13 November 2013

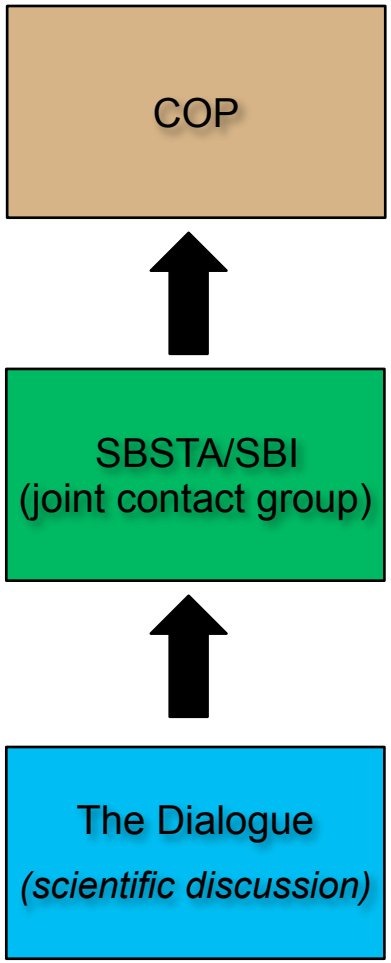
Contents

- **Long-term global goal** - Parties agreed to (COP16):
  a) Reduce emissions so as to hold the global average temperature rise below 2°C above pre-industrial level
  b) Periodically review the long-term global goal, starting in 2013
  c) Consider strengthening the long-term global goal , i.e. 1.5°C, based on the review outcome at COP21

- **Scope of the review** - The review will assess (COP18):
  a) The adequacy of this long-term global goal in the light of the ultimate objective of the Convention (Theme 1)
  b) The overall progress toward achieving the long-term global goal, including a consideration of the implementation of the commitments under the Convention (Theme 2)

- **Timeline** - the first review started in 2013 and will be concluded by 2015; and subsequent reviews will take place following the adoption of an IPCC assessment report or at least every seven years;

Institutional arrangements for conducting the Review

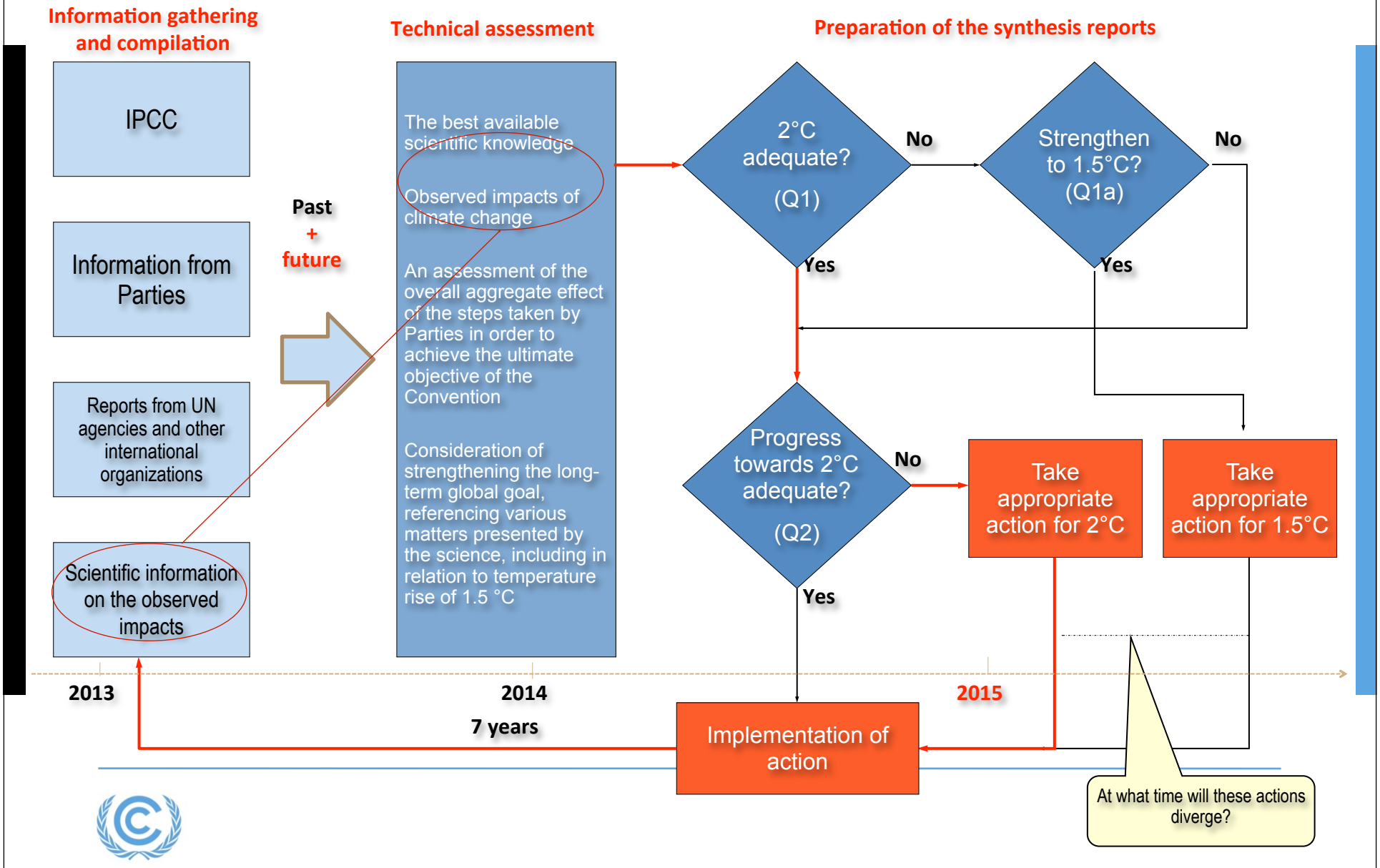


- Conduct the review
- Provide guidance to SBSTA/SBI
- Take appropriate action based on the review outcome in 2015

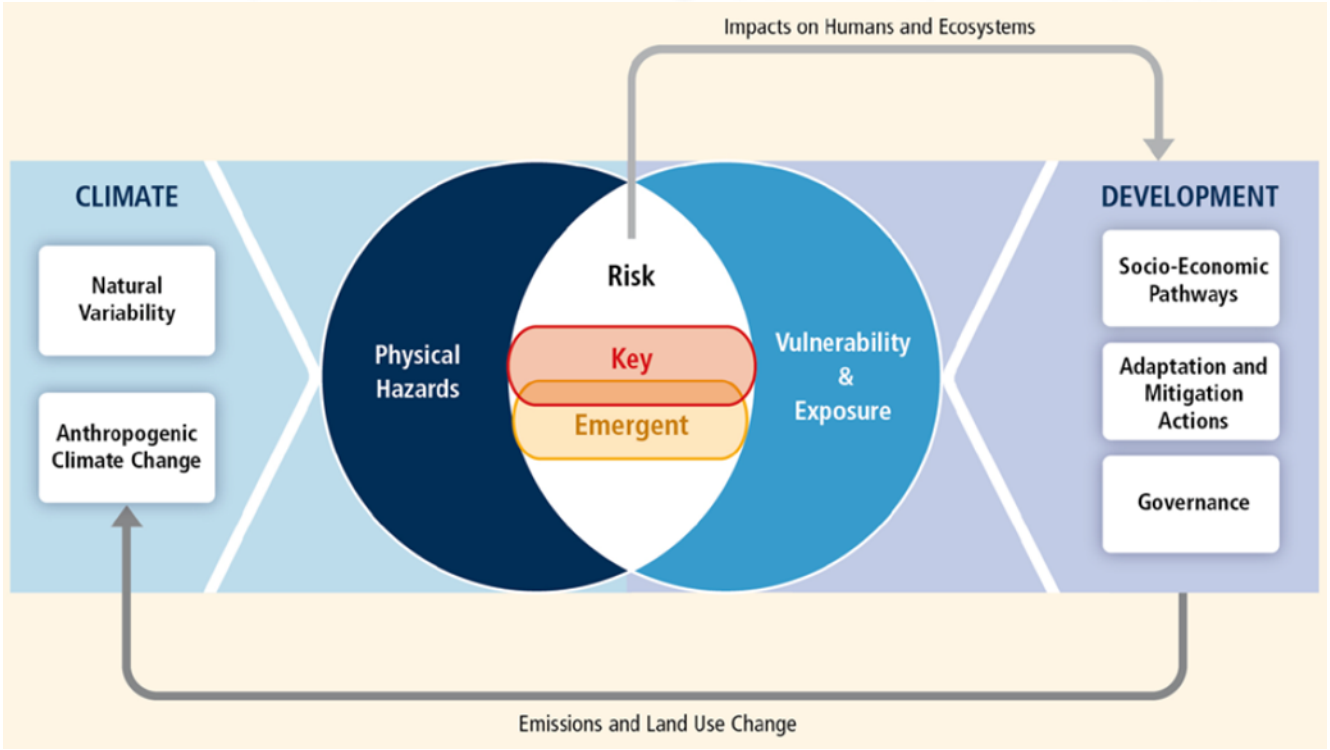
- Establish a SBSTA/SBI joint contact group
- Negotiate recommendations from the Dialogue
- Report to COP and provide inputs to ADP
- Provide guidance to the Dialogue

- Established at COP18
- 2 Co-facilitators were selected by Parties, open-ended participation (no members - as compared with AC)
- Scientific workshops and expert meetings
- Report recommendations to the SBs (joint contact group)
- Report to COP (COP19 & COP20) and inform ADP

Phases and inputs



- The review should take into account, inter alia:
  a) Observed impacts of climate change (1/CP.16, para 139 (a)(ii));



  b) An assessment of the overall aggregated effects of the steps taken by Parties in order to achieve the ultimate objective of the Convention (1/CP.16, para 139 (a)(iii))

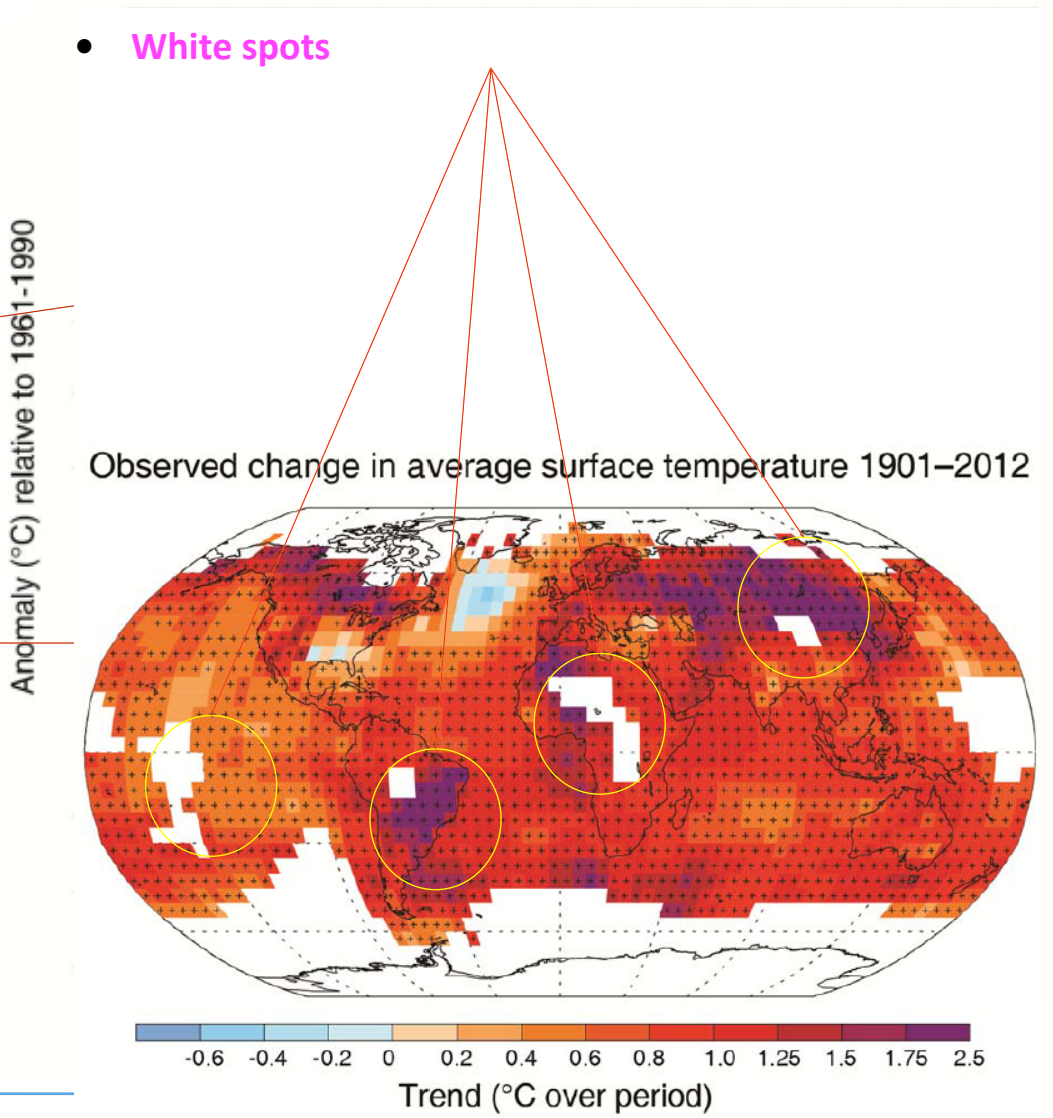
- **How much is the temperature increase since preindustrial?**

The globally averaged combined land and ocean surface temperature data as calculated by a linear trend, show a warming of **0.85** [0.65 to 1.06] °C, over the period 1880–2012, when multiple independently produced datasets exist

The total increase between the average of the 1850–1900 period and the 2003–2012 period is **0.78** [0.72 to 0.85] °C, based on the single longest dataset available

Based on the longest global surface temperature dataset available, the observed change between the average of the period 1850–1900 and of the AR5 reference period is **0.61** [0.55 to 0.67] °C

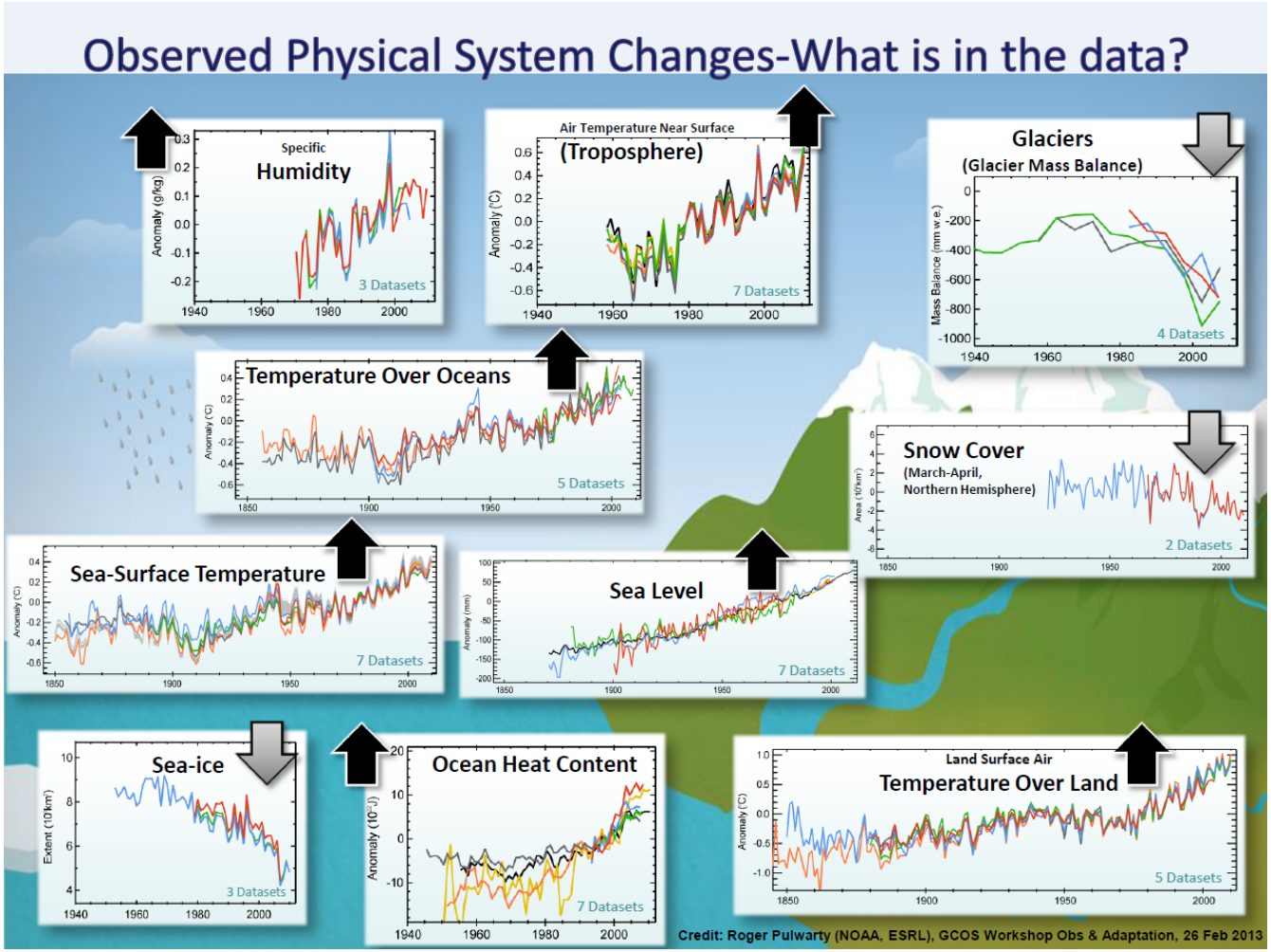
- **White spots**



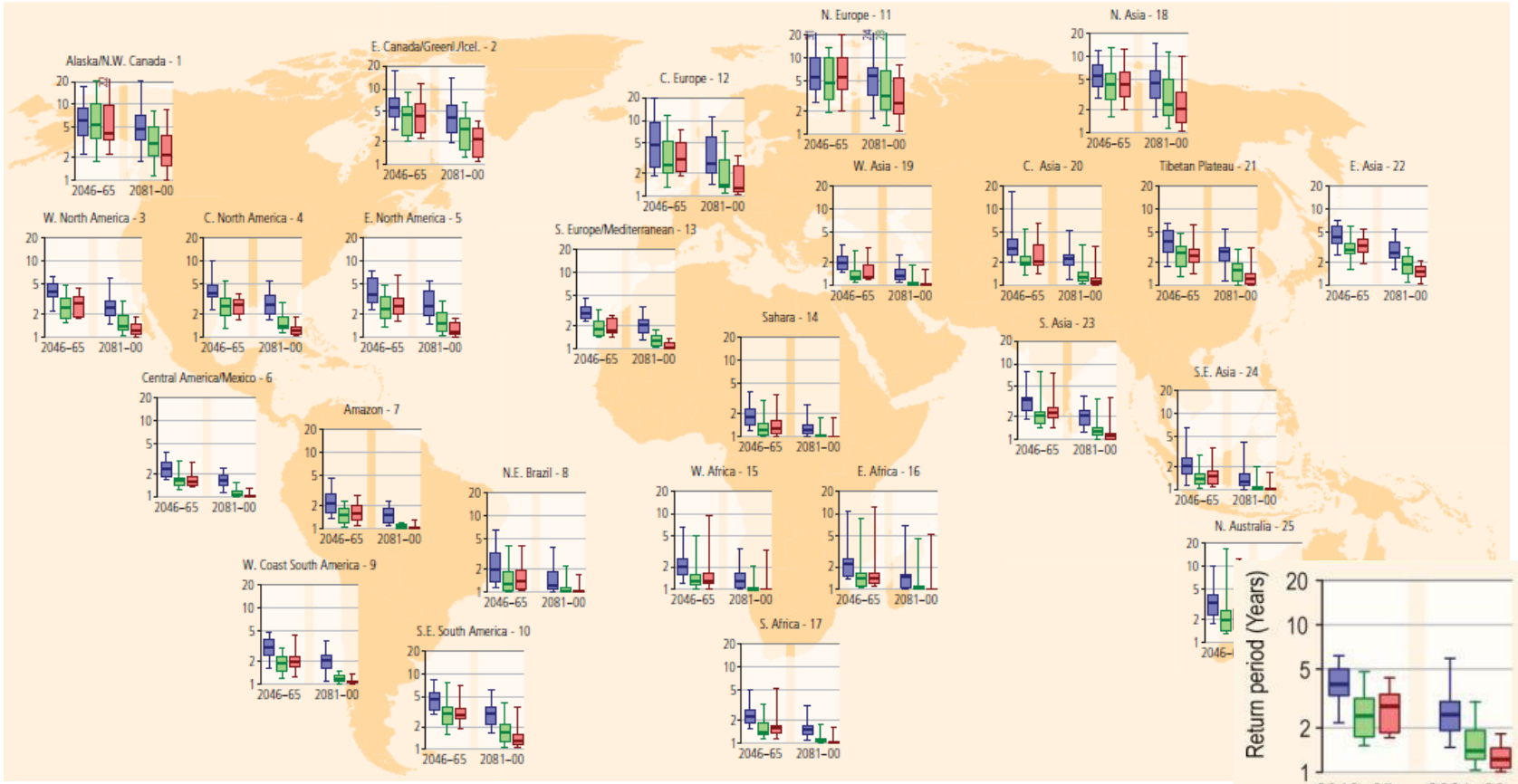
1. To assess the adequacy of the long-term global goal you need to understand regional changes in the climate system and actual impacts as experienced on the ground

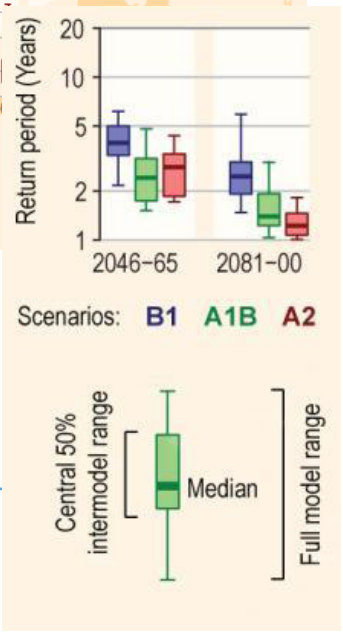
- WMO presentation

  at SED 1



Needs of information – IPCC – Extreme events (projections)





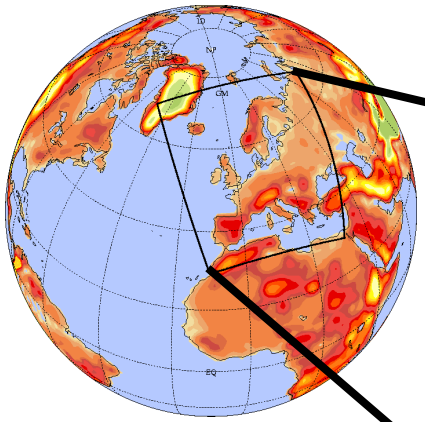
- **Climate models project more frequent hot days throughout the 21st century | In many regions, increase in warm days and nights with increased frequency (time between "20-year" (unusually) warm day will decrease)**

2. To assess the adequacy of the long-term global goal you need to assess inasmuch climate information can help to enhance adaptive capacity

Time slice experiments

CTRL (1961-1990)

SCEN (2071-2100)



Greenhouse-Gas Scenario

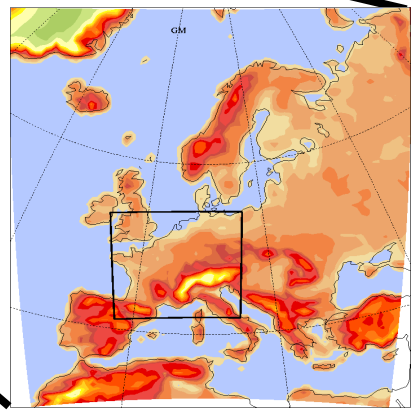
(IPCC SRES A2)

Coupled GCM

(HadCM3, ~300 km)

Atmospheric GCM

(HadAM3, ~120 km)

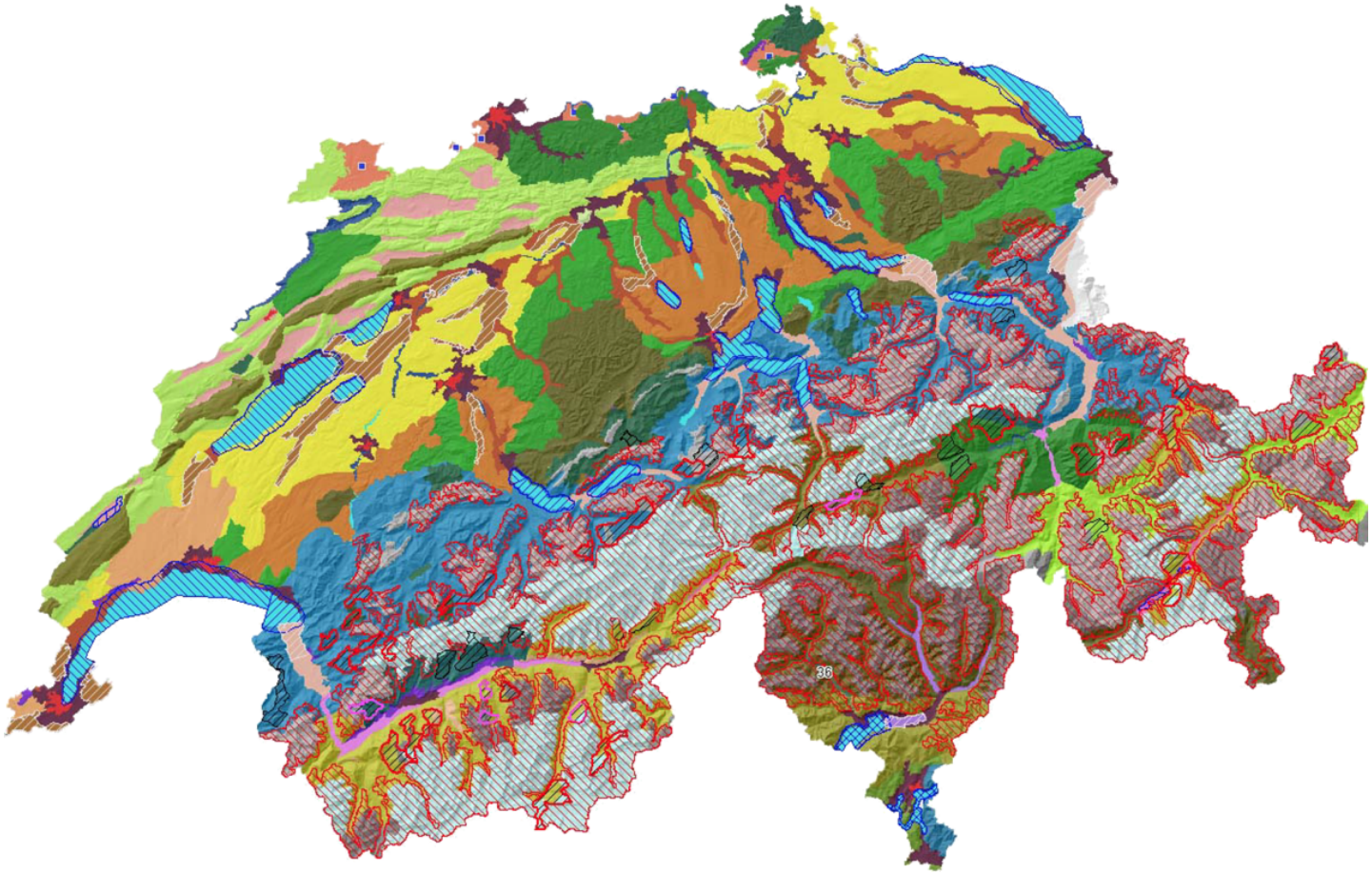


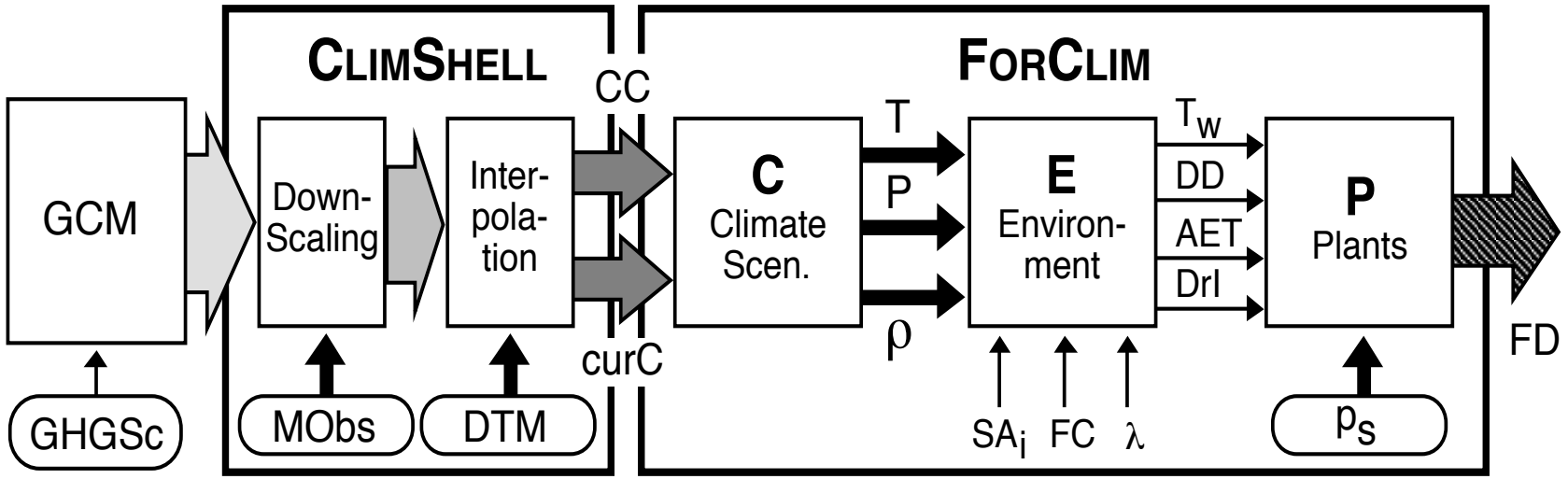
Regional Climate Model (RCM)

(CHRM / ETH, 56 km)

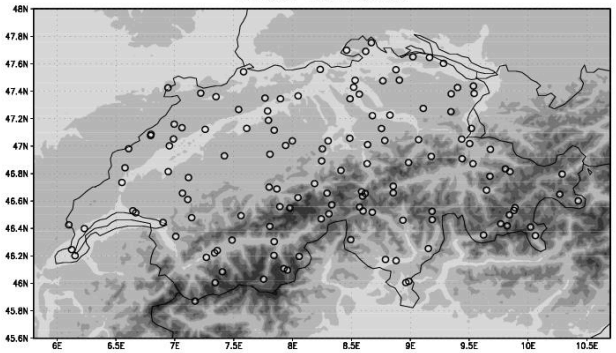
(EU-Project PRUDENCE, NCCR Climate)

An illustrative example – Diversity of Swiss Landscapes within Europe

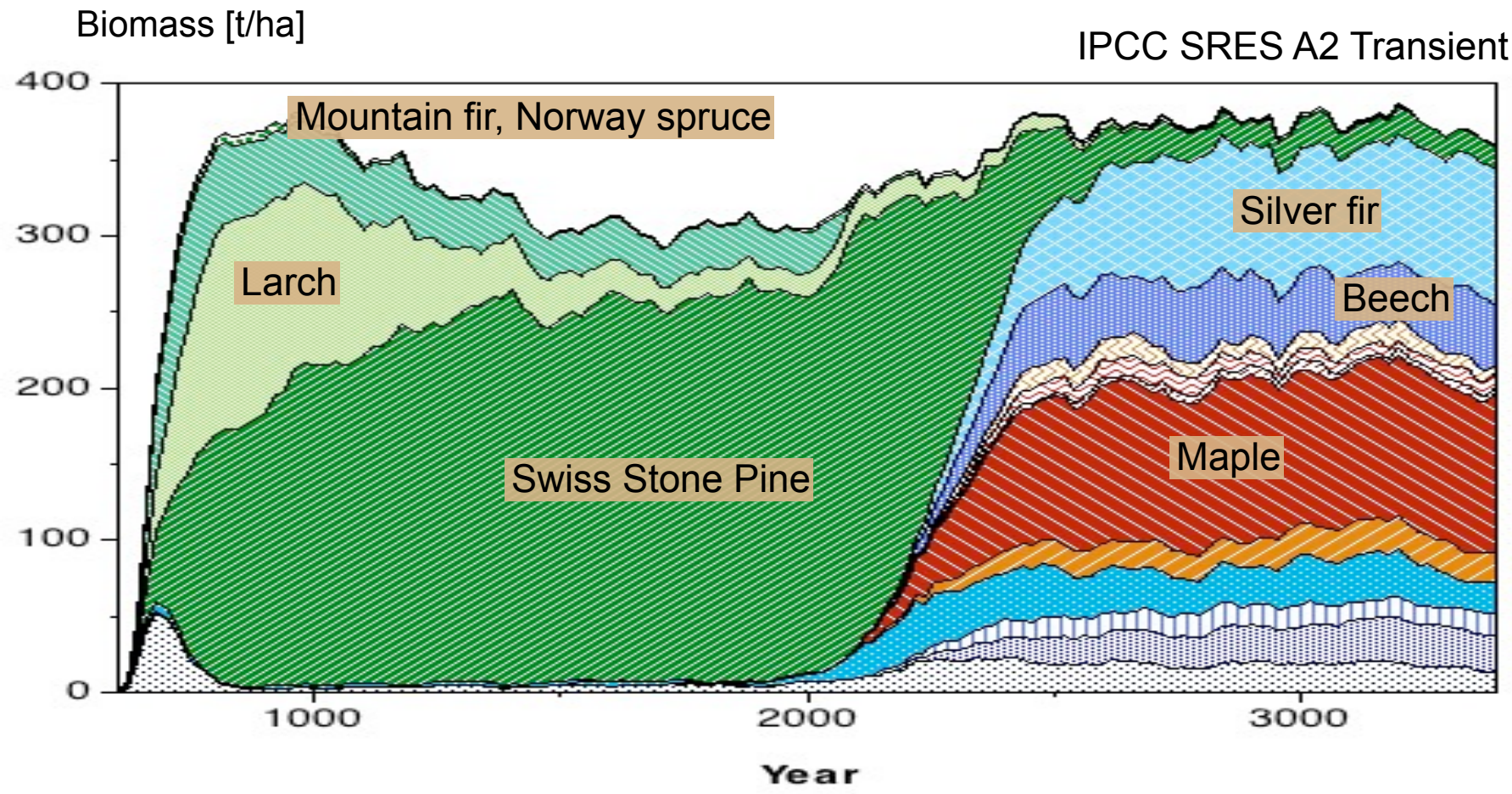




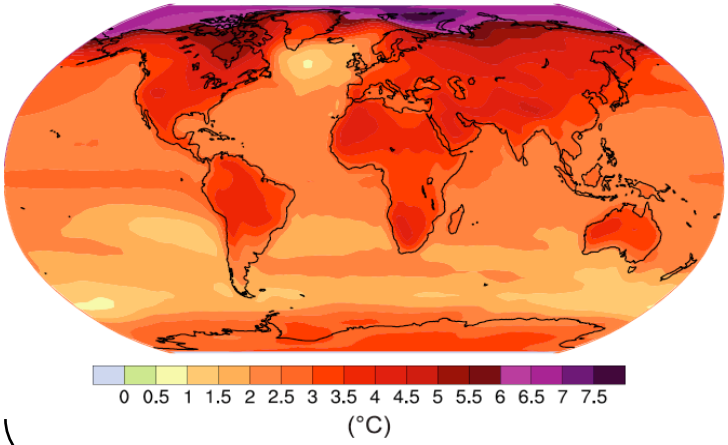
- SRES scenarios of GHG emissions
- AOGCM e.g. HADCM3 or ECHAM5
- Downscaling - ClimShell
- ForClim patch model

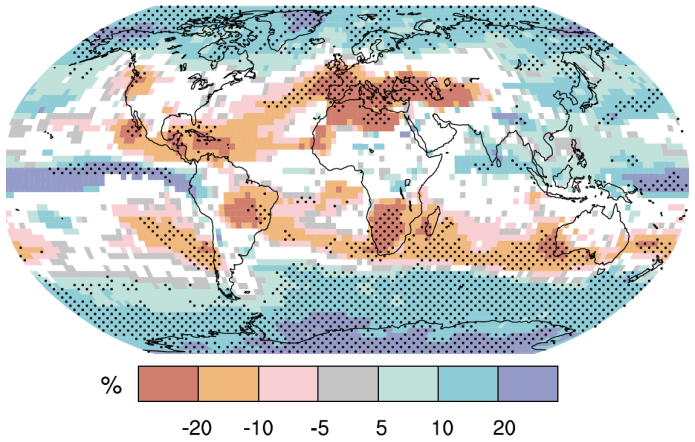


Fischlin & Gyalistras, 1997



Fischlin & Gyalistras, 1997. Global Ecol. Biogeogr. - Hafner, 2000.





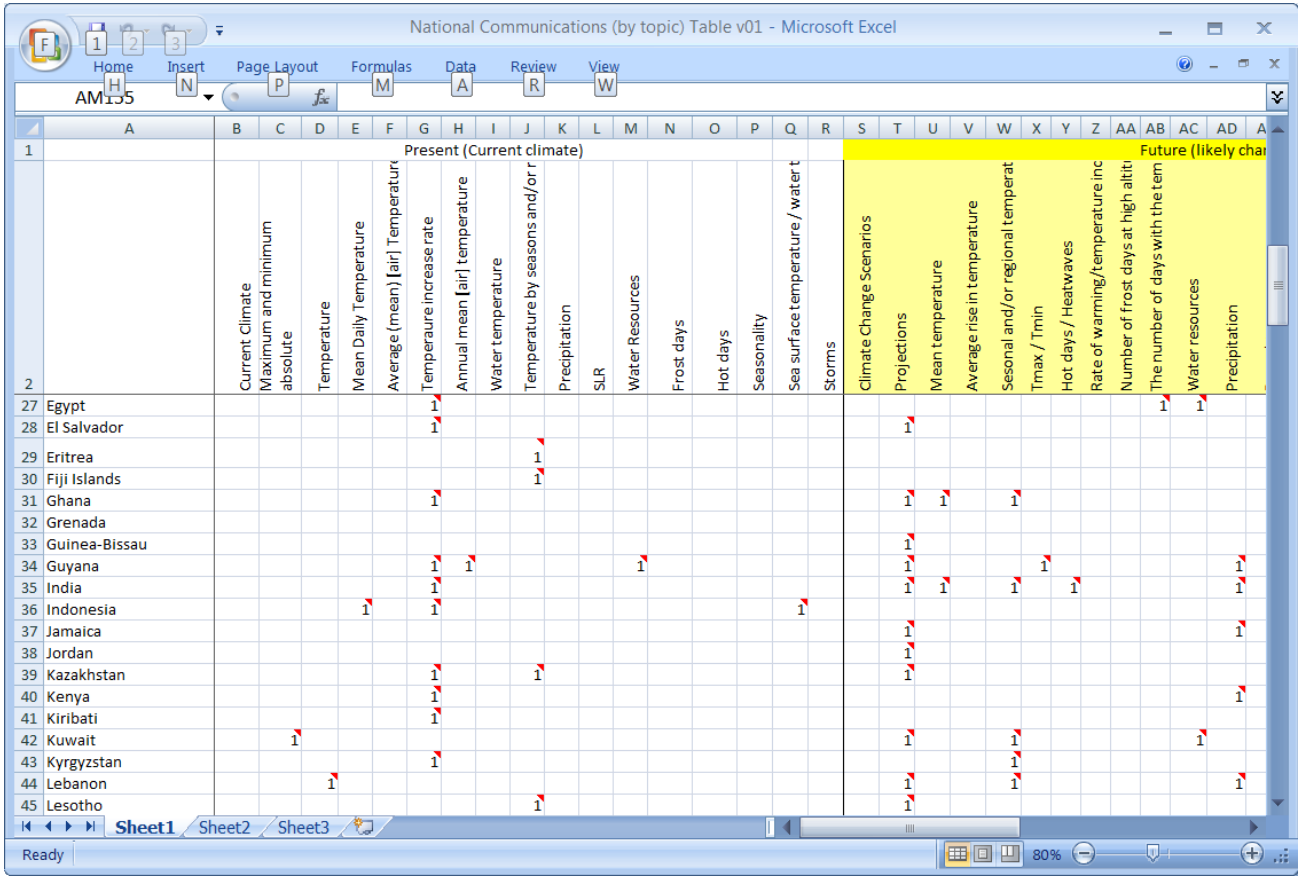
1. Emissions scenario
2. Climate model
3. Downscaling
4. Impact model

- Statistical downscaling requires measurements in the region of interest

- Statistical downscaling is economically attractive if some measurements are available, e.g. roughly 20 years of ground measurements of variable of interest suffice to allow for statistical downscaling from GCM scale to local scale even in a complex topography such as found in the European Alps

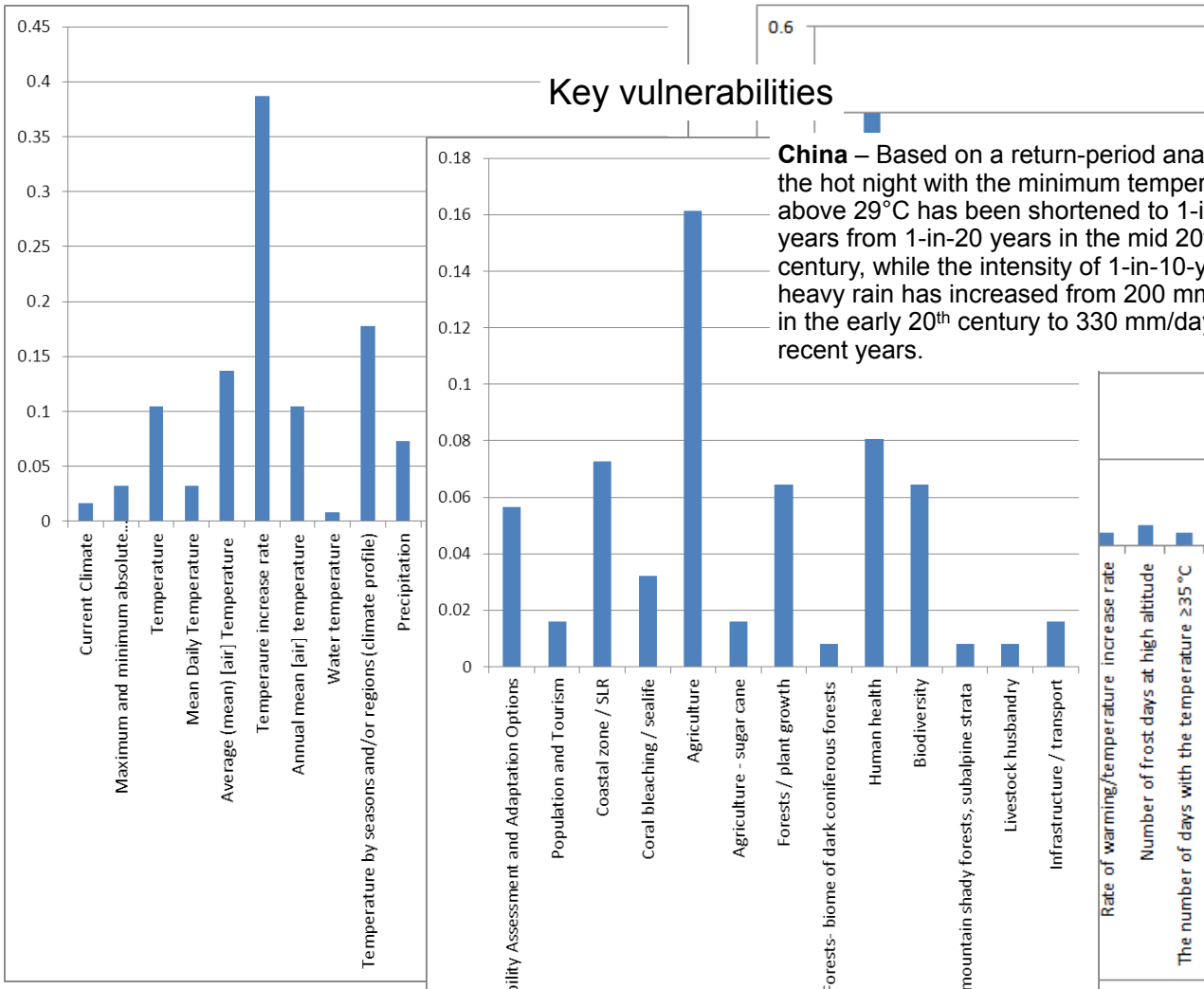
- Adding 2 years of measurements on a mountain slope substantially increases quality of interpolation

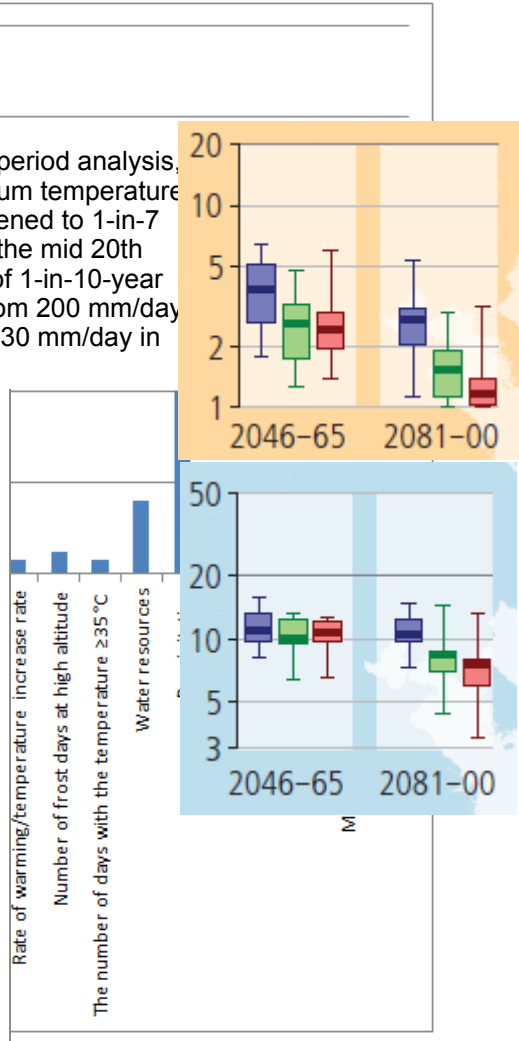
- Analyzed 31 NatComs of Annex I and 93 NatComs of non-Annex I Parties. Parties are reporting on observed and projected changes in the chapters on National Circumstances and on Impacts, vulnerability and adaptation



Observed changes

Projected changes





Key vulnerabilities

China – Based on a return-period analysis, the hot night with the minimum temperature above 29°C has been shortened to 1-in-7 years from 1-in-20 years in the mid 20th century, while the intensity of 1-in-10-year heavy rain has increased from 200 mm/day in the early 20th century to 330 mm/day in recent years.

Key Messages:

To assess the adequacy of the long-term global goal you need to understand regional changes in the climate system and actual impacts as experienced on the ground

To assess the adequacy of the long-term global goal you need to assess inasmuch climate information can help to enhance adaptive capacity

Thank you