

# Capacity building for local science and research community (climate change)

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# Questions for this session (1/3)

- Building a community of interface scientists (new breed of scientists)
- How can we address lack of climate data in Africa?
- How can local scientists build a pipeline of papers from the region that can be assessed in future assessment reports?
- How can emerging local scientists become IPCC Authors?

# Questions for this session (2/3)

- How can we ensure that research on the pressing issues facing Africa is fully assessed in the IPCC?
- Early sight of emerging research challenges and new understanding of climate change to inform local research agenda
- Exposing new and existing students and post-docs to the culture and practice of the international research community

# Questions for this session (3/3)

- Beyond AR5: Prospects to Improve Africa's Contribution to Future assessments

# IMPROVING PARTICIPATION OF DEVELOPING/EIT COUNTRIES IN THE IPCC

**Recommendation 1:** Invite the IPCC secretariat to consider ways to enhance the awareness of the Focal Points regarding IPCC activities and possible funding for participation of scientists from their countries, for example by setting up a communication and outreach initiative. Also, it would be important that the Focal Points and Bureau members be encouraged to nominate more experts from developing/EIT countries.

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INTERGOVERNMENTAL PANEL ON climate change



# IMPROVING PARTICIPATION OF DEVELOPING/EIT COUNTRIES IN THE IPCC

**Recommendation 2** : Ensure that procedures for the nomination and selection of authors and reviewers are conceived in a way that facilitates the identification and selection of suitable experts from developing countries/EIT. Ensure an adequate balance in the selection of CLAs, LAs and REs, by taking care that the nominations of suitable experts are considered, with specific attention for poorly represented regions and developing countries/EIT.

# IMPROVING PARTICIPATION OF DEVELOPING/EIT COUNTRIES IN THE IPCC

## Recommendation 3

Consider ways to increase the provision of financial support for the attendance of more experts from developing and EIT countries to IPCC meetings (increase the number of journeys supported by the Trust Fund), noting that past experience suggests that funding journeys is not sufficient to increase participation in itself.

# IMPROVING PARTICIPATION OF DEVELOPING/EIT COUNTRIES IN THE IPCC

## Recommendation 4

Organize more regional meetings in developing regions. These may in particular contribute to the identification of grey and non-English literature, drawing it to the attention of the relevant author teams.



# IMPROVING PARTICIPATION OF DEVELOPING/EIT COUNTRIES IN THE IPCC

## Recommendation 5

Encourage the participation of experts from developing countries/EIT in the outreach process of IPCC products.

## Recommendation 6

The IPCC Bureau in general (and the WG Bureaux, in particular) should encourage more involvement of young experts from the developing countries/EIT in the IPCC process.

# IMPROVING PARTICIPATION OF DEVELOPING/EIT COUNTRIES IN THE IPCC

## Recommendation 7

The Panel invites the Task Group set up in Plenary XXX, regarding the catalytic role of the IPCC regarding scenario development, to explore possibilities to facilitate DC/EIT country scientist participation

# IMPROVING PARTICIPATION OF DEVELOPING/EIT COUNTRIES IN THE IPCC

## Final remark

Improving national scientific capacity is regarded as a key issue by responding Focal Points (Q7, Q11). Funding is also an issue frequently mentioned by the Focal Points and cited by the Bureau members.

# From AR5 WGII Chap 22 (Africa chapter)

**A wide range of data and research gaps constrain decision making in processes to reduce vulnerability, build resilience, and plan and implement adaptation strategies at different levels in Africa (*high confidence*).**

Key sectors	Gaps observed
Climate science (1)	<ul style="list-style-type: none"> <li>• <b>Research in climate and climate impacts would be greatly enhanced if data custodians and researchers worked together to use observed station data in scientific studies.</b> Research into regional climate change and climate impacts relies on observed climate and hydrological data as an evaluative base. These data are most often recorded by meteorological institutions in each country and sold to support data collection efforts. However, <b>African researchers are generally excluded from access to these critical data because of the high costs involved</b>, which hinders both climate and climate impacts research.</li> </ul>

# Research gaps in different sectors

Key sectors	Gaps observed
Ecosystems	<ul style="list-style-type: none"><li>• <b>Monitoring networks for assessing long-term changes to critical ecosystems</b> such as coastal ecosystems, lakes, mountains, grasslands, forests, wetlands, deserts, and savannas to enhance understanding of long-term ecological dynamics, feedbacks between climate and ecosystems, the effects of natural climate variability on ecosystems, the limits of natural climate variability, and the marginal additional effects of global climate forcing</li><li>• <b>Develop the status of protected areas to include climate change effects</b></li></ul>

# Research gaps in different sectors

Key sectors	Gaps observed
Food systems (1)	<ul style="list-style-type: none"><li data-bbox="388 439 1895 915">• Socioeconomic and environmental <b>trade-offs of biofuel production</b>, especially the effect on land use change and food and livelihood security; better agronomic characterization of biofuel crops to avoid maladaptive decisions with respect to biofuel production</li><li data-bbox="388 933 1875 1243">• <b>Vulnerability to and impacts of climate change on food systems</b> (production, transport, processing, storage, marketing, and consumption)</li></ul>

# Research gaps in different sectors

Key sectors	Gaps observed
Food systems (2)	<ul style="list-style-type: none"><li>• Impacts of climate change on urban food security, and dynamic of rural–urban linkages in vulnerability and adaptive capacity</li><li>• Impacts of climate change on food safety and quality</li></ul>



# Research gaps in different sectors

Key sectors	Gaps observed
Water resources	<ul style="list-style-type: none"><li>• Characterization of Africa's groundwater resource potential; understanding interactions between non-climate and climate drivers as related to future groundwater resources</li><li>• Impacts of climate change on water quality, and how this links to food and health security</li><li>• <b>Decision making under uncertainty with respect to water resources</b> given limitations of climate models for adequately capturing future rainfall projections</li></ul>

# Research gaps in different sectors

Key sectors	Gaps observed
Human security and urban areas	<ul style="list-style-type: none"><li>• Research to explore and monitor the links between <b>climate change and migration</b> and its potential negative effects on environmental degradation; the potential positive role of migration in climate change adaptation</li><li>• Improved methods and research to analyze the relation between <b>climate change and violent conflict.</b></li></ul>

# Research gaps in different sectors

Key sectors	Gaps observed
Livelihoods and poverty	<ul style="list-style-type: none"><li>• Methodologies for cyclical learning and decision support to enable anticipatory adaptation in contexts of high poverty and vulnerability</li><li>• Frameworks to <b>integrate differentiated views of poverty into adaptation and disaster risk reduction</b>, and to better link these with social protection in different contexts</li><li>• Ethical and political dimensions of engaging with local and traditional</li></ul>

# Research gaps in different sectors

Key sectors	Gaps observed
Health (1)	<ul style="list-style-type: none"><li>• Research and improved methodologies to assess and quantify the impact of climate change on vector-borne, food-borne, water-borne, nutrition, heat stress, and indirect impacts on HIV</li><li>• Research to quantify the direct and indirect <b>health impacts of extreme weather events</b> in Africa; injuries, mental illness; health infrastructure</li></ul>

# Research gaps in different sectors

Key sectors	Gaps observed
Health (2)	<ul style="list-style-type: none"><li>• Frameworks and research platforms to be developed with other sectors to determine how underlying risks will be addressed to improve health outcomes</li></ul>

# Research gaps in different sectors

Key sectors	Gaps observed
Adaptation (2)	<ul style="list-style-type: none"><li>• Potential changes in economic and social systems under different climate scenarios, to understand the implications of adaptation and planning choices</li><li>• Principles/determining factors for effective adaptation, including <b>community-based adaptation</b></li><li>• Understanding <b>synergies and trade-offs between different adaptation and mitigation</b> approaches</li></ul>

# Research gaps in different sectors

Key sectors	Gaps observed
Adaptation (3)	<ul style="list-style-type: none"><li>• Additional national and sub-national modeling and analysis of the economic costs of impacts and adaptation, including of the “soft” costs of impacts and adaptation</li><li>• Monitoring adaptation</li></ul>

# Research gaps in different sectors

Key sectors	Gaps observed
Other	<ul style="list-style-type: none"><li>• Methods in vulnerability analysis for capturing the complex interactions in systems across scales</li><li>• Understanding compound impacts from concomitant temperature and precipitation stress, e.g., effect on a particular threshold of a heat wave occurring during a period of below normal precipitation</li></ul>



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# Useful links:



- z [www.ipcc.ch](http://www.ipcc.ch) : IPCC (reports and videos)
- z [www.climate.be/vanyp](http://www.climate.be/vanyp) : my slides and other documents
- z [www.skepticalscience.com](http://www.skepticalscience.com): excellent responses to contrarians arguments
- z **On Twitter: @JPvanYpersele  
and @IPCC\_CH**