

# A regional approach to climate change analysis: Brief history of these workshops, goals and expected outcomes

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# Regional climate change workshops

- 1999: CCI/CLIVAR Working Group on Climate Change Detection meets
  - I asked, “What could a small group of volunteers do to further global climate change detection?”
    - Internationally coordinate a suite of indices
      - Mainly highlighting changes in extremes
      - Derived from daily data
      - So multiple analyses could fit together seamlessly
    - Hold regional climate change workshops

# Address multiple needs

- Win/wins
  - To succeed everyone must benefit
- Individual participants
- Countries
- Regions
- Global climate understanding and outside experts

# Individuals

- Learn more about climate change
- Learn more about the science behind:
  - Quality control, homogeneity testing, and time-series analysis
- Learn new tools to assist with this processing
- Get to know colleagues from neighboring countries
- Co-author a peer-reviewed journal article
- Understand how extremes are changing in your country
- Return with a PowerPoint presentation to show colleagues about how your local climate is changing

# Countries

- Capacity development
- Ability to produce state-of-the-science analyses that can be shared with customers on how climate extremes are changing
  - A crucial service of the Global Framework for Climate Services

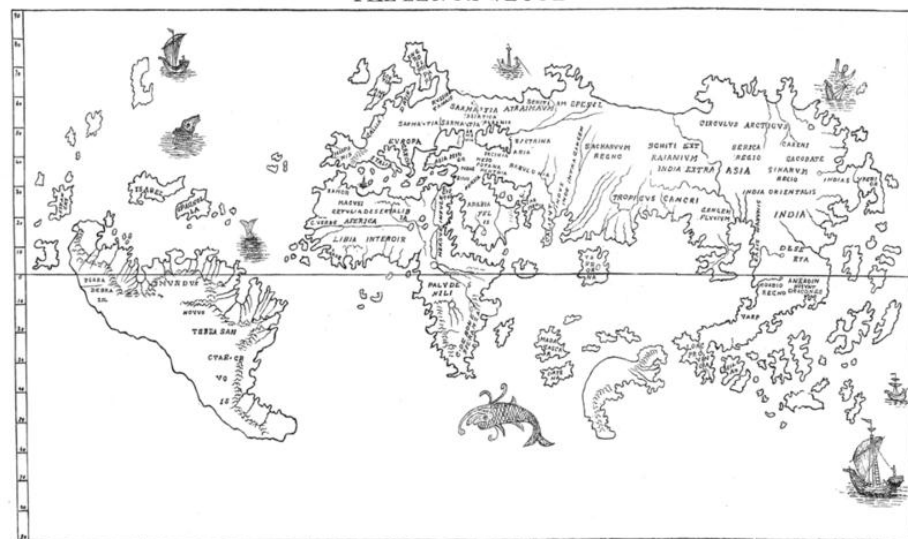
# Region

- Neighboring island analyses increase confidence
  - We've seen that clearly in the past
- Potentially foster future collaboration
- Regional problems often need regional solutions which require regional understandings

# Global analysis and outside experts

- Co-author a peer-reviewed paper that documents changes in extremes in this region
  - That can fit in seamlessly with global analyses
- Fill in blank spots on analysis maps
  - “Here be dragons” no longer

THE LENOX GLOBE

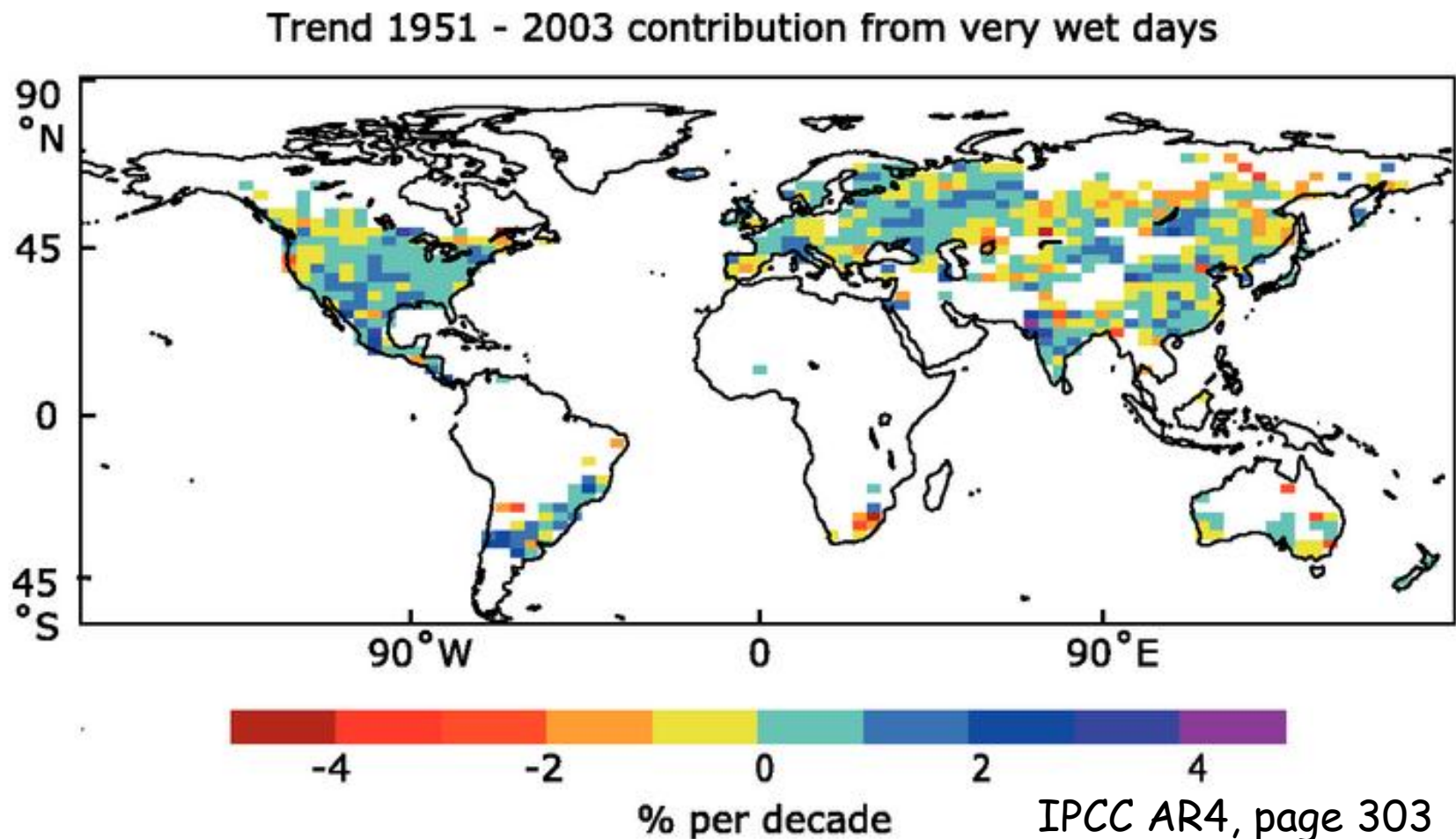


“Hic sunt dracones” just below the Equator on the east coast of China in the 1510 Lenox Globe



# What could the IPCC say about this area in 2007?

- For extreme precipitation, not much





# Workshops

## (largely dependent on funding)

- 1998-2002: 5 workshops (workshop “recipe” and software refined)
- 2004-2005: 6 workshops (ramping up for IPCC)
- 2006: 1
- 2007: 2
- 2008: 1
- 2009: 3
- 2011: 2
- 2010: 0
- 2012: 2

# Workshop failures

- Some early workshops failed to produce peer-reviewed journal papers
  - Solution: Have an individual or team lined up before the workshop with both the time, ability and desire to lead this
    - It takes a couple months of careful post workshop analysis to be good enough for peer-review

# This workshop's main problems

- We have a lot of work to do in a short period of time
  - It is an ETCCDI workshop – plus
  - Plus discussing
    - Data rescue
    - The Global Framework for Climate Services
    - Etc.
- A few participants may not have their data ready for the workshop software
  - If so, please talk to Lucie, Tanny, or me at the next break so we can see what we can do to help before the hands-on data analysis starts

# Data sharing conflict

- The conflict:
  - Global science needs free and open exchange of data
  - Most countries have policies against releasing data
- Workshop solution:
  - Most countries at the workshops:
    - Have not publically released their data
    - But have been willing to publically release the suite of indices calculated by the software
      - Meets the needs of some climate change research
        - » E.g., need to know how the climate is changing not what the temperature was on the 27<sup>th</sup> of January 1978
    - Have allowed the lead author to have access to the data while working on the paper and only for the paper
      - So far none of these data have seen unauthorized use

# Example of the article from a 2007 workshop

## Changes in temperature and precipitation extremes in western central Africa, Guinea Conakry, and Zimbabwe, 1955–2006

E. Aguilar,<sup>1</sup> A. Aziz Barry,<sup>2</sup> M. Brunet,<sup>1,3</sup> L. Ekan,<sup>4</sup> A. Fernandes,<sup>5</sup> M. Massoukina,<sup>6</sup> J. Mbah,<sup>7</sup> A. Mhanda,<sup>8</sup> D. J. do Nascimento,<sup>9</sup> T. C. Peterson,<sup>10</sup> O. Thamba Umba,<sup>11</sup> M. Tomou,<sup>12</sup> and X. Zhang<sup>13</sup>

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<sup>6</sup>Service Météorologie National, Brazzaville, Congo.

<sup>7</sup>Direction de la Météorologie National du Cameroon, Douala, Cameroon.

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<sup>10</sup>National Climatic Data Center, NOAA, Asheville, North Carolina, USA.

<sup>11</sup>Agence Nationale de Météorologie et de Télédétection par Satellite, Kinshasa, Congo.

<sup>12</sup>Direction Générale de l'Aviation Civile et de la Météorologie, Bangui, Central African Republic.

<sup>13</sup>Climate Research Branch, Meteorological Service of Canada, Downsview, Ontario, Canada.

- Published in the *Journal of Geophysical Research*
- All workshop country participants are co-authors

# Summary

- This is a real workshop where we will work, not just listen to talks
  - But it should be a heck of a lot of fun too.
- This work will directly contribute to global climate change assessments used by the IPCC
  - Though meeting their deadline will be challenging
- Country and regional analyses will be quite interesting
  - How are extremes changing in your country?
  - We will find out



The End





# Additional information

- ETCCDI:
  - <http://www.clivar.org/organization/etccdi/resources/resources-publications>
- ETCCDI Software and Indices
  - <http://cccma.seos.uvic.ca/ETCCDMI/>
- ETCCDI workshop background
  - <http://journals.ametsoc.org/doi/abs/10.1175/2008BAMS2501.1>