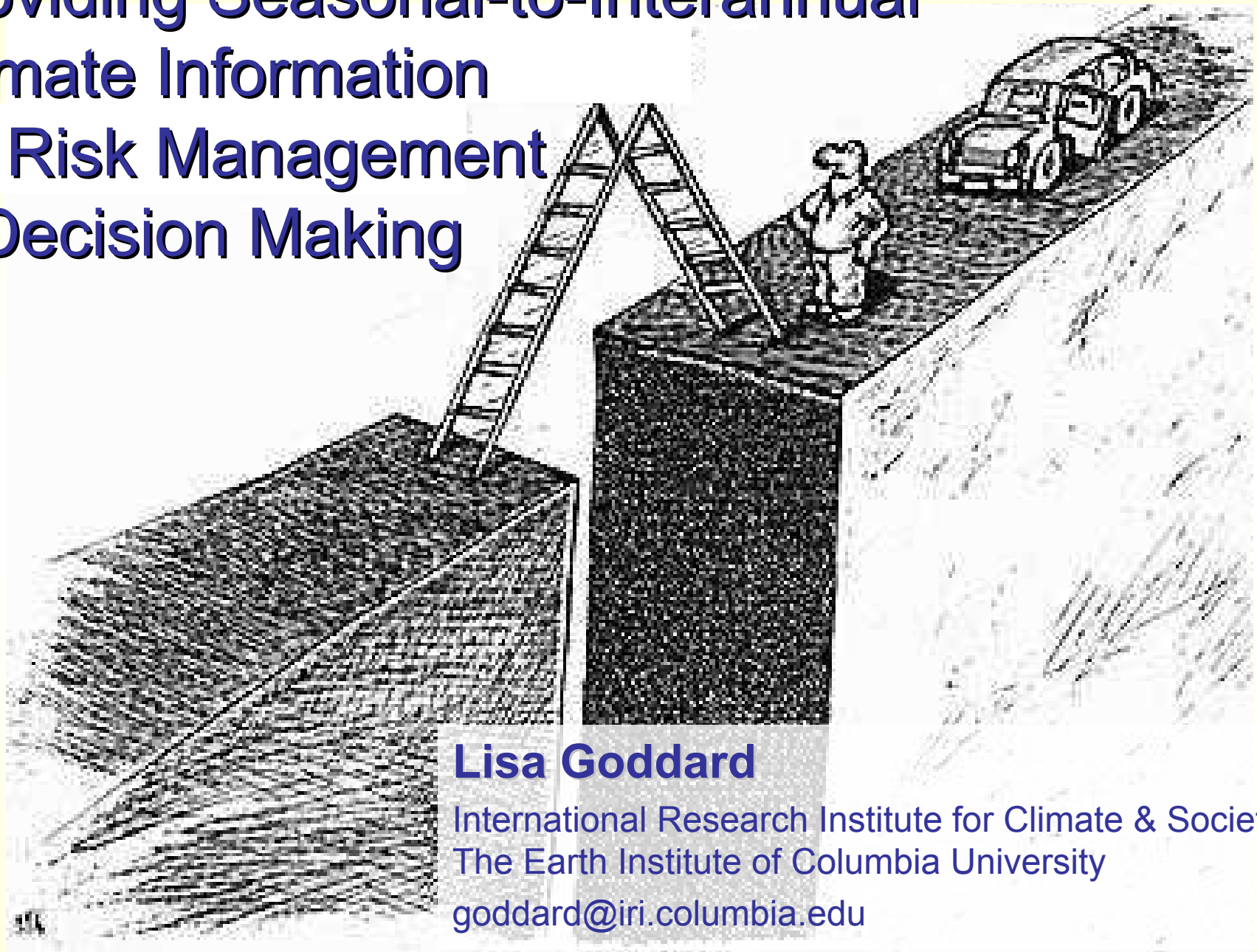
Providing Seasonal-to-Interannual Climate Information for Risk Management & Decision Making



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The Paper…

Providing Seasonal-to-Interannual Climate Information for Risk Management and Decision Making

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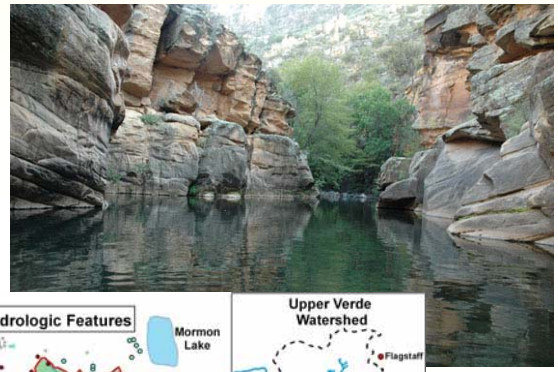
The collective ***we*** is necessary for providing information that can be used for risk management and decision making

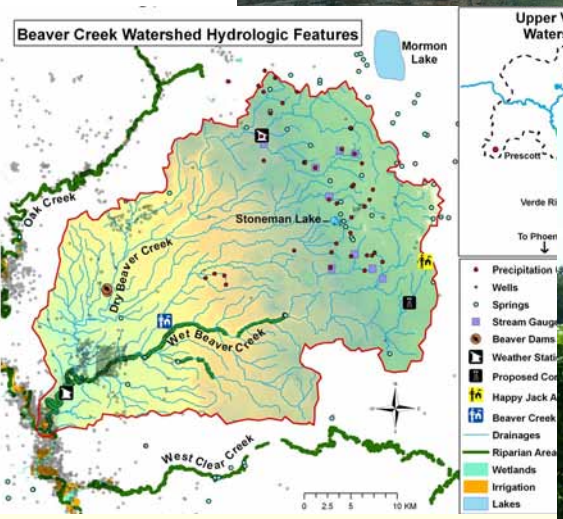
Who is a “User”?

- Climate risk managers and decision makers

Who is a “User”?

- Climate risk managers and decision makers
- Sectoral experts





Who is a "User"?

- Climate risk managers and decision makers
- Sectoral experts
- Climate scientists

Who is a "User"?

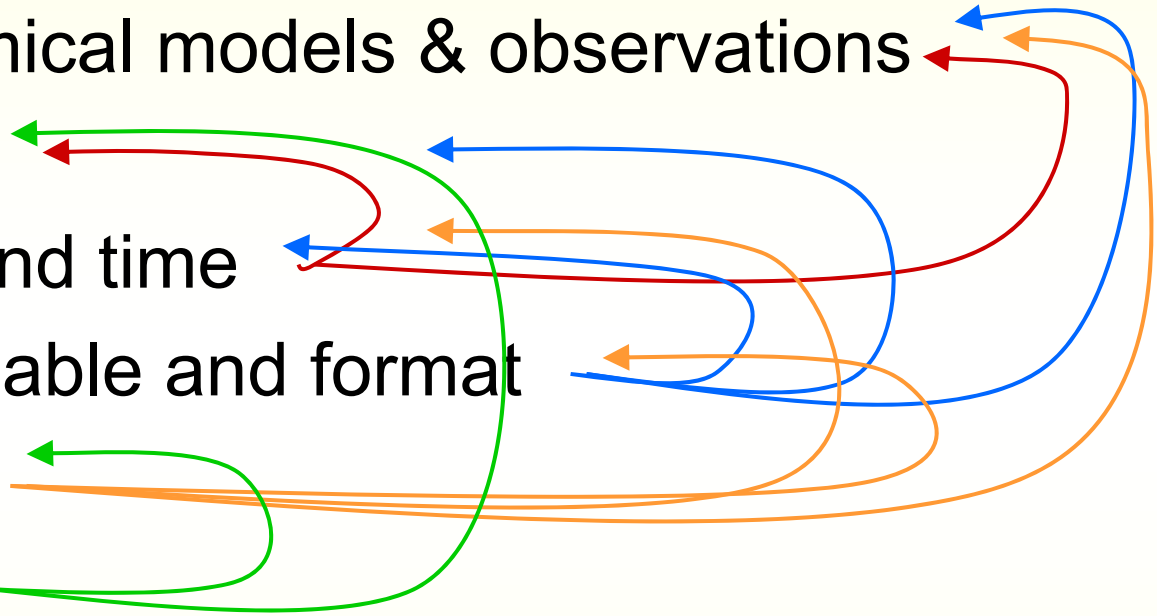
- Climate risk managers and decision makers
- Sectoral experts
- Climate scientists
- Media

Who is a “User”?

- Climate risk managers and decision makers
- Sectoral experts
- Climate scientists
- Media
- General public

Gaps between provision and use of climate information

- Quality of dynamical models & observations
- Accessibility
- Scale – space and time
- Specificity – variable and format
- Communication
- Timeliness



➔ *These are not independent*

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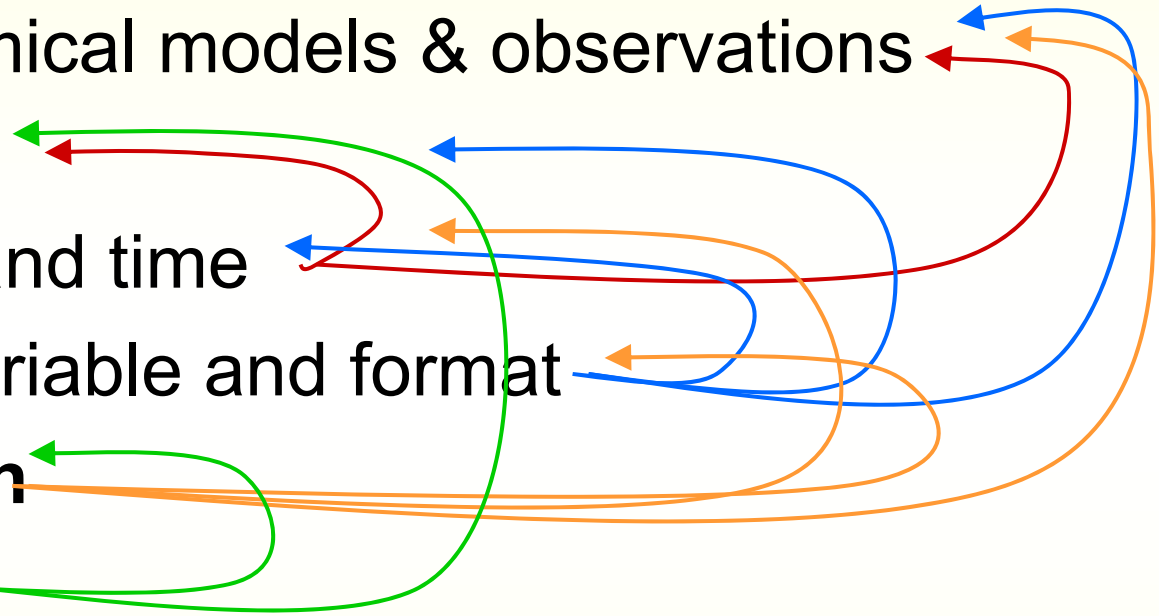


➔ *These are not independent*

Increasing the Value and Usability of Climate Information

Scale:

- Higher resolution, in space & time

Specificity:

- Targeting new forecast variables
  - Streamflow
  - NDVI
  - Dry spells
  - Heating Degree Days
- Providing a more flexible format

Communication:

- Putting information in context
- Using clear language

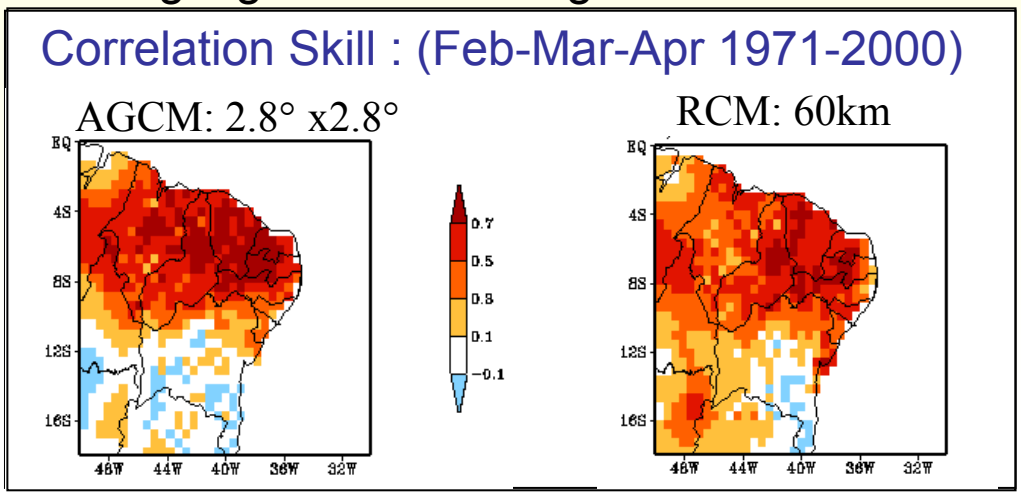
Chain of Experts &
Chain of Information

Spatial **SCALE**

Seasonal precipitation totals

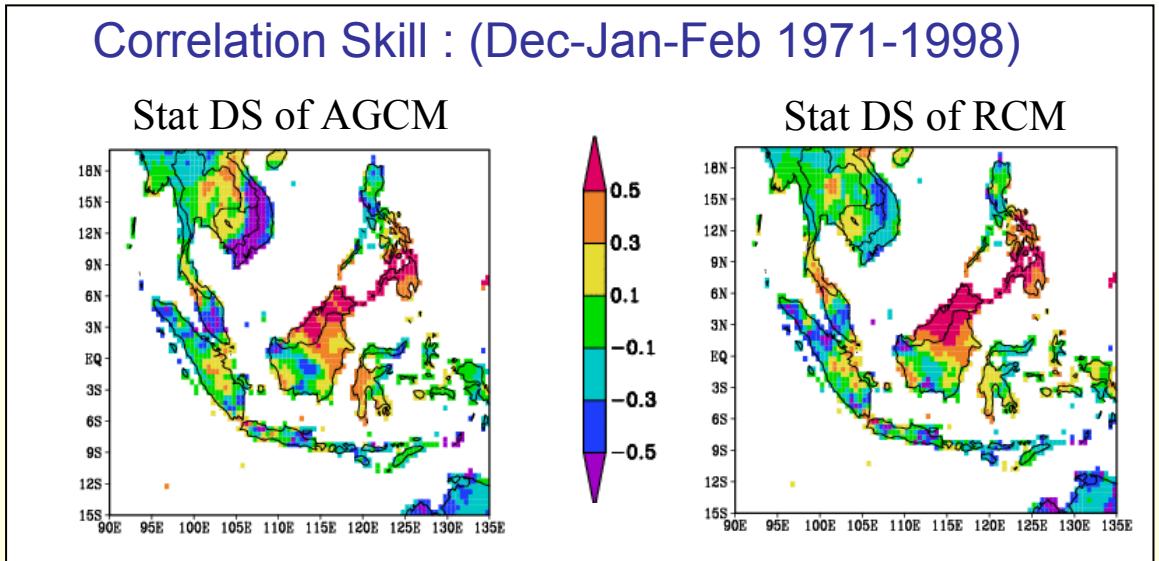
DYNAMICAL DOWNSCALING:

Nesting high resolution regional model in a lower resolution global GCM



STATISTICAL DOWNSCALING:

Empirically downscale global/regional GCM fields using historical observations

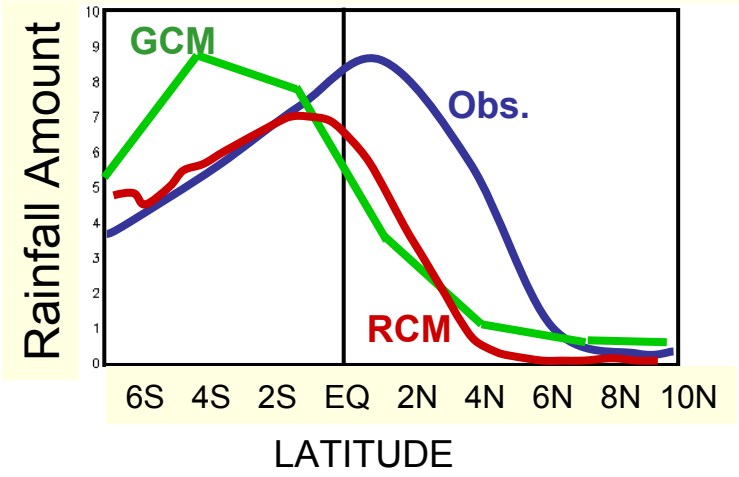


The best approach, requires **capacity, research,** and **data**.

Temporal **SCALE**

More from regional model simulations over NE Brazil

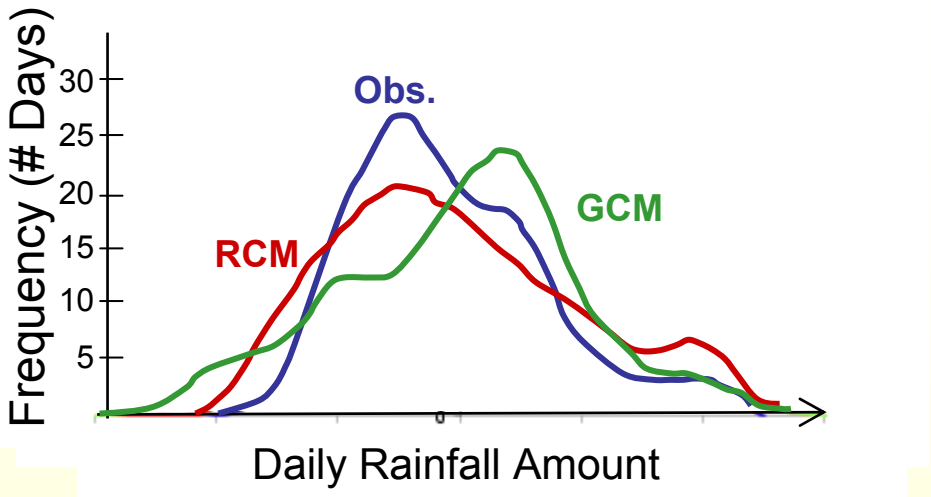
Average Rainfall (Feb-Mar-Apr) off NE coast of S. America



ITCZ placement is much improved in RCM, and…

frequency of daily rainfall amounts within the season is improved.

Frequency of Daily Rainfall (Feb-Mar-Apr)



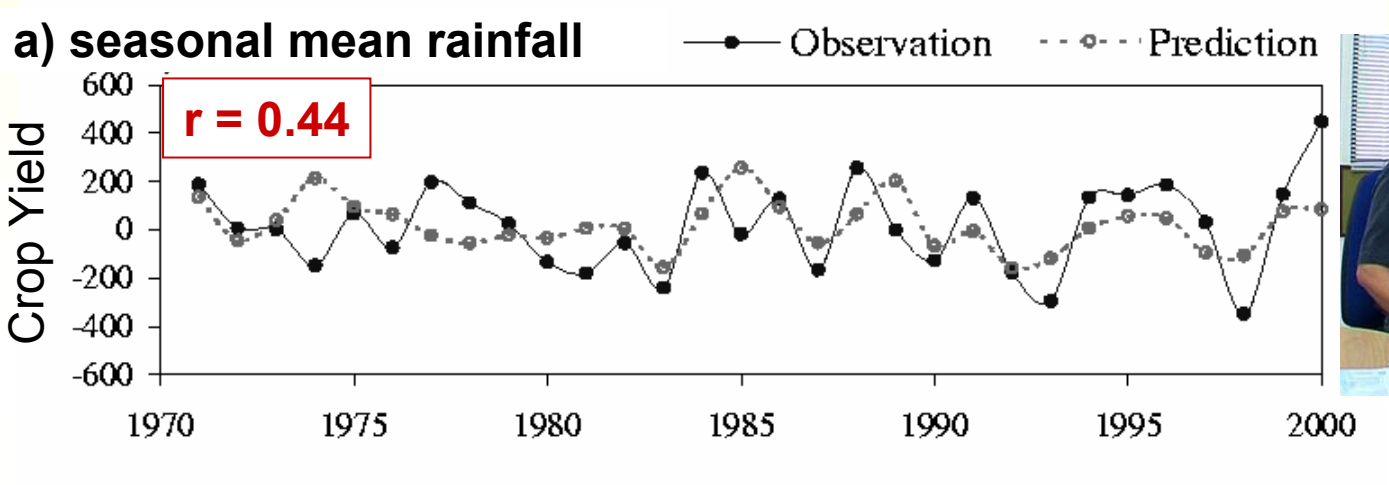
(Sun et al, 2005, J. Climate)

SCALE + SPECIFICITY

… applying it to agriculture

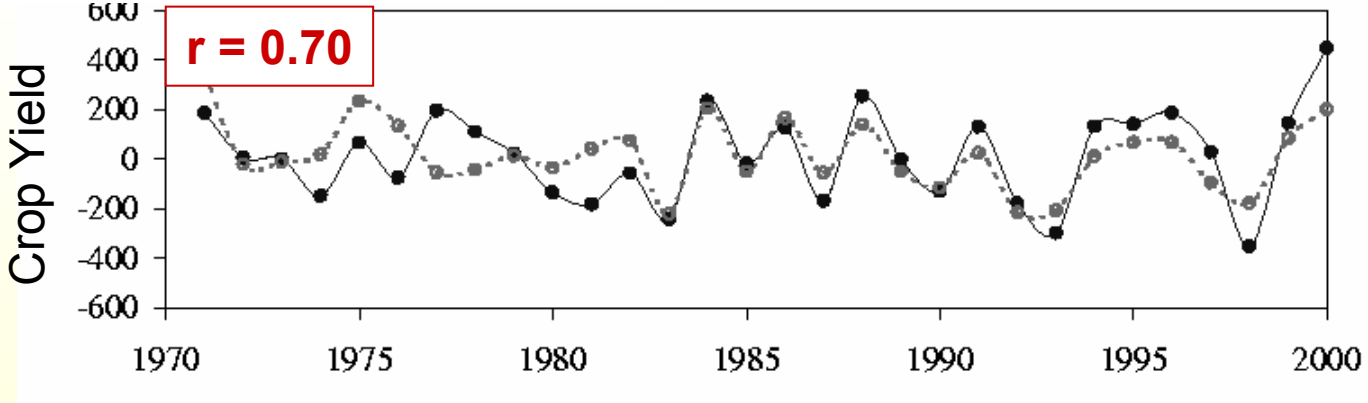
Corn yield predictions for NE Brazil using:

a) seasonal mean rainfall



versus

b) Weather index

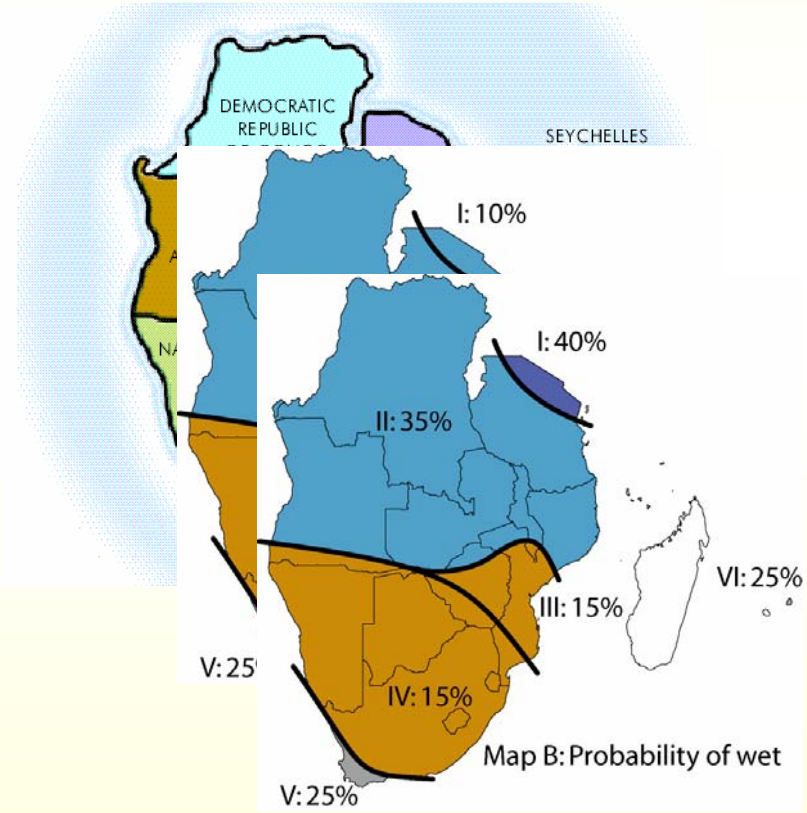


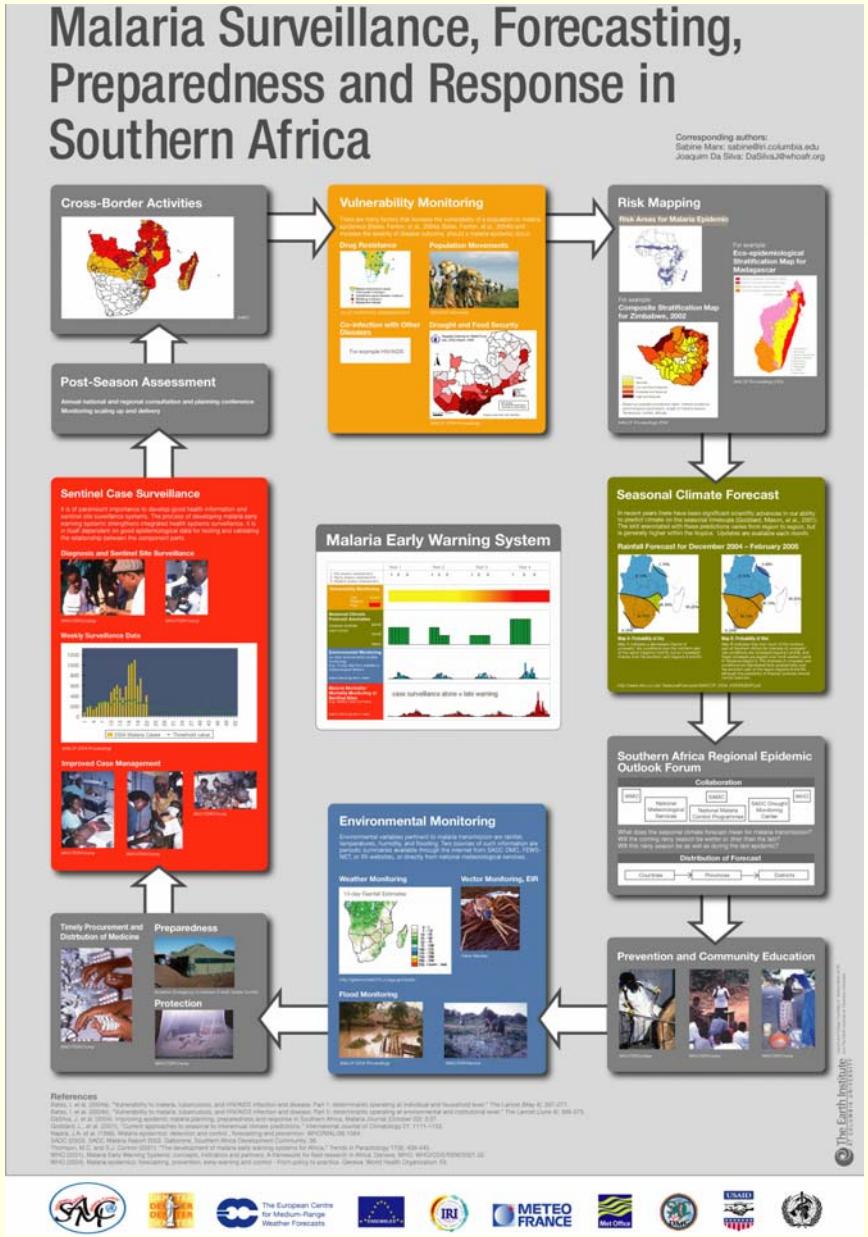
(Sun et al, 2006)

SPECIFICITY + COMMUNICATION

Example: Malaria Early Warning

From 1st Southern Africa Regional Epidemic Malaria Outlook Forum Harare, 2004





Putting it all together -

Emergency appeal

International Federation of Red Cross and Red Crescent Societies

West and Central Africa: Flood preparedness

Emergency appeal n° MDR61003
11 July 2008

This preliminary Emergency Appeal seeks CHF 750,000 (USD 731,134 or EUR 462,475) in cash, kind, or services to support the National Societies of West and Central Africa to assist 47,500 beneficiaries.

CHF 483,047 has been allocated from the Federation's Disaster Relief Emergency Fund (DREF) to start the planned activities. Discussions are currently taking place to reallocate approximately CHF 550,000 remaining from the 2007 West Africa floods appeal to support this appeal. While these discussions are underway, partners are encouraged to provide timely support to this appeal.

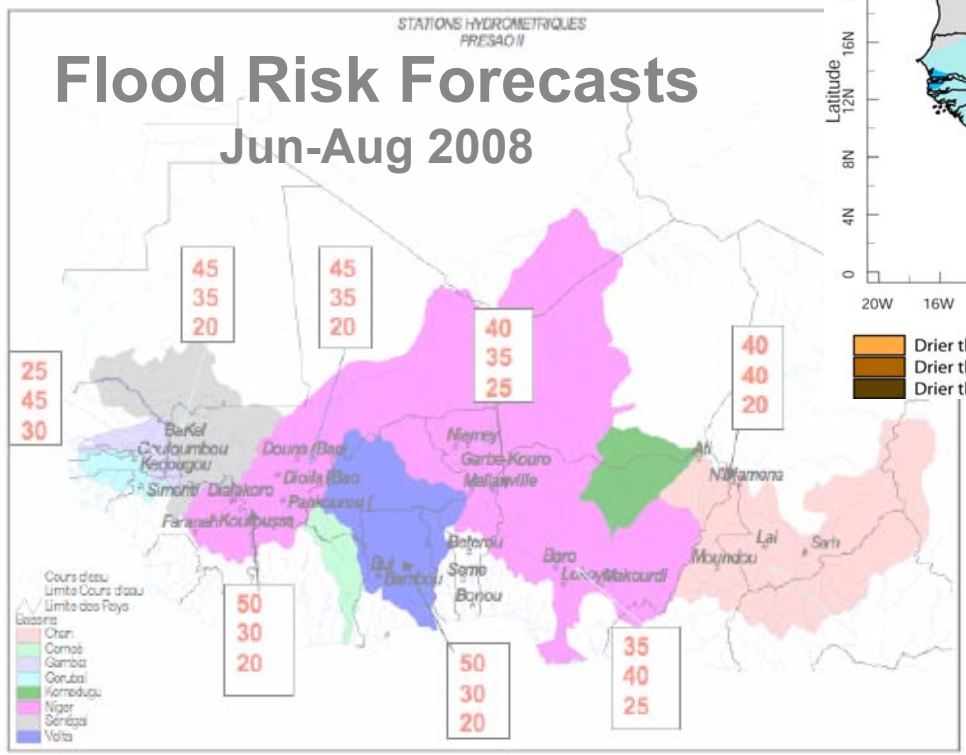
Red Cross Volunteer, Lomé, Togo, June, 2008

International Federation
of Red Cross and Red Crescent Societies

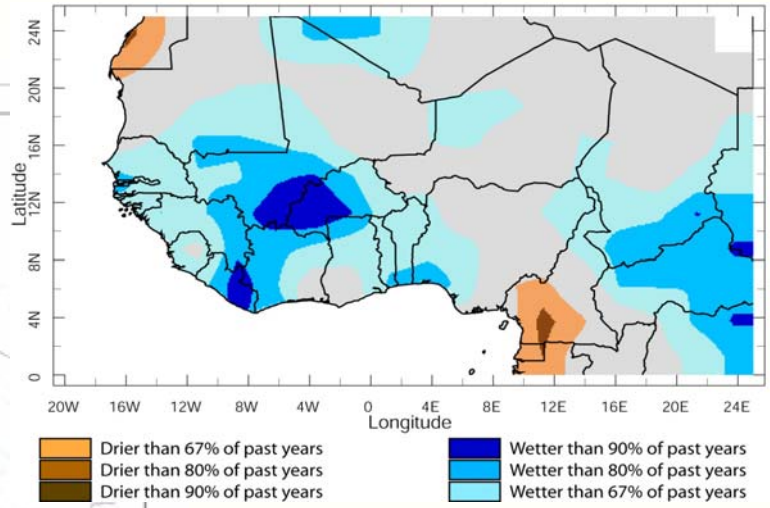
West Africa preparedness appeal

Precipitation Forecasts
Jun-Aug 2008

Flood Risk Forecasts
Jun-Aug 2008



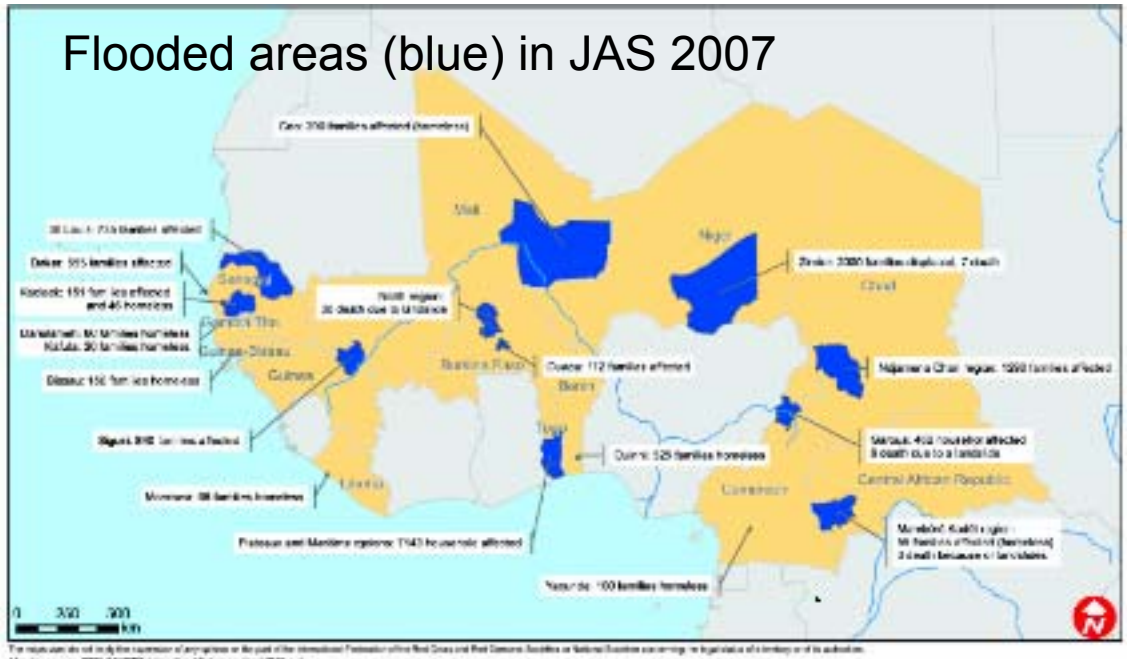
Observed Rainfall



Early Action works:

- Faster response: **1-2 days** rather than 40 in 2007
- Fewer victims (**30** instead of hundreds)
- Lower cost per beneficiary (**30%**)

Example: Red Cross volunteers in Ghana saving lives by alerting Volta fishermen that the Bagre dam would be spilled.



RECOMMENDATIONS

- Access to data (models & observations)
- Chain of experts / chain of information

  clear lines and mechanisms for communication and feedback throughout the chain
- RESEARCH (i.e. investigation, experimentation, discussion …)

  including social research on how information is used, perceived, manipulated, passed through chains, etc.