Getting climate information to farmers in Africa

CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security CCAFS

ICRISAT INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS

IRI International Research Institute for Climate and Society EARTH INSTITUTE | COLUMBIA UNIVERSITY

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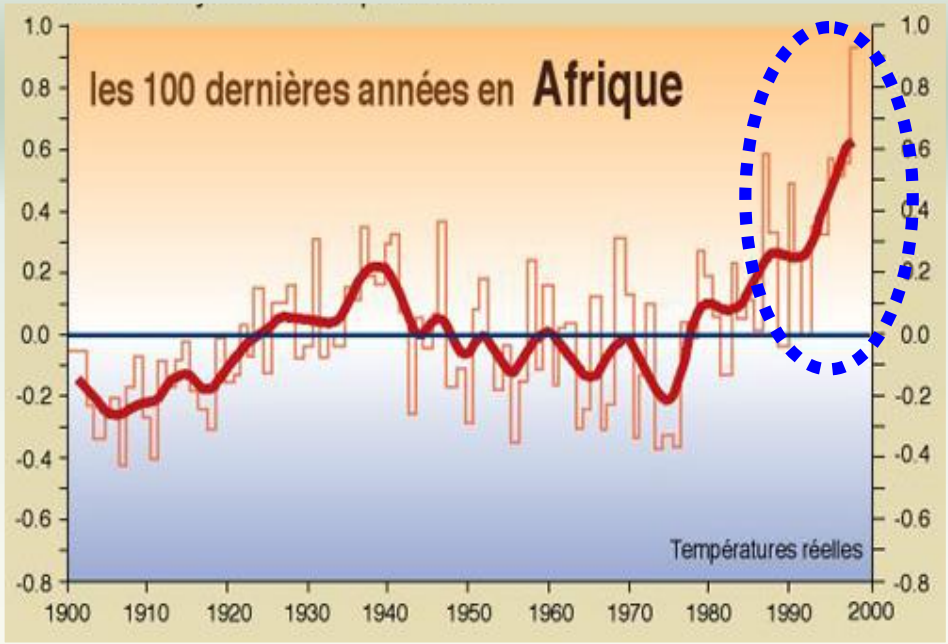
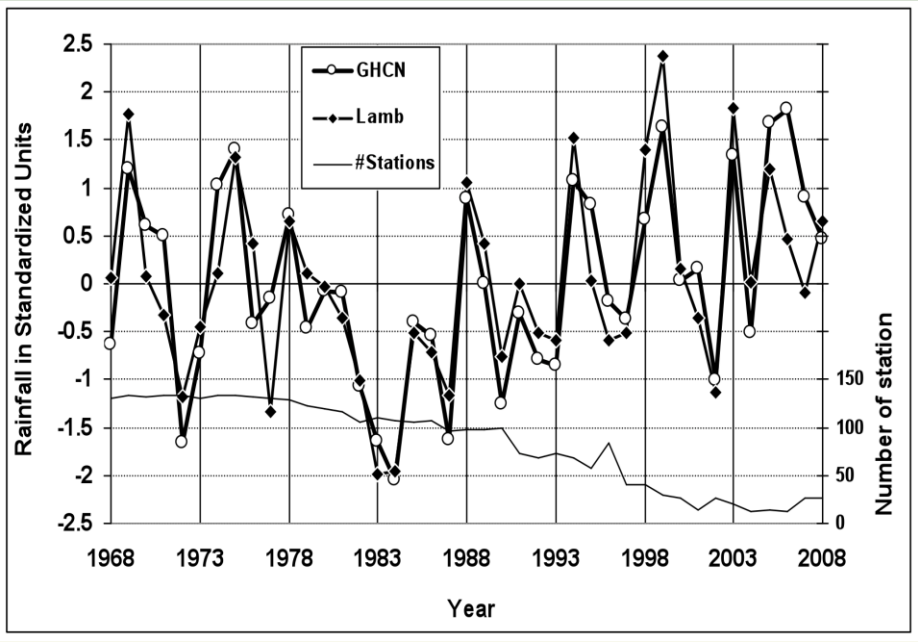
Outline

1. What is the problem/opportunity?
2. What research was conducted to deal with it?
3. What partnerships were needed to make an outcome?
4. What key lesson do you have for the R&D community?

The problem: Climate variability & change





- Temperature rise of ≈0.6-0.7 °C since late 70's
- Largely higher than the global increase
- Sea level rise of 18 cm during the 20th century

In Senegal, CCAFS scientists collaborated with the Meteorological Agency to develop downscaled seasonal and weather forecasts

Before

Seasonal forecast
- crop variety
- varieties

Onset forecast
- farm preparation
- optimum planting

During cropping season

Nowcasting
- flooding saving life (thunder)

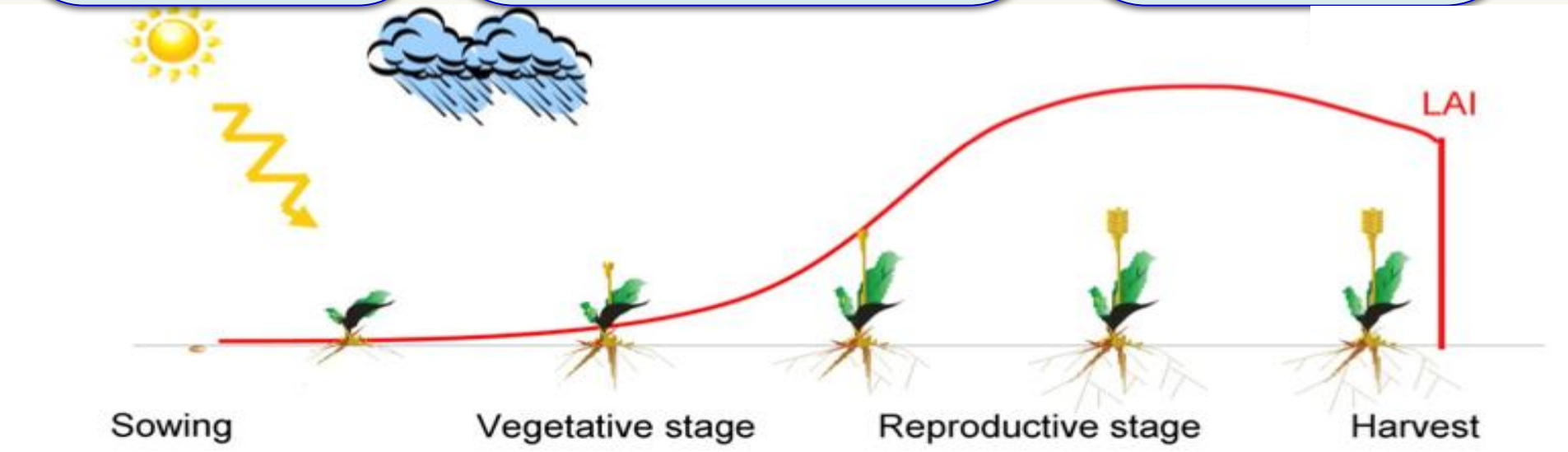
Daily forecast
- use of fertilizer / pesticide

Ten-day forecast
- weeding, field work

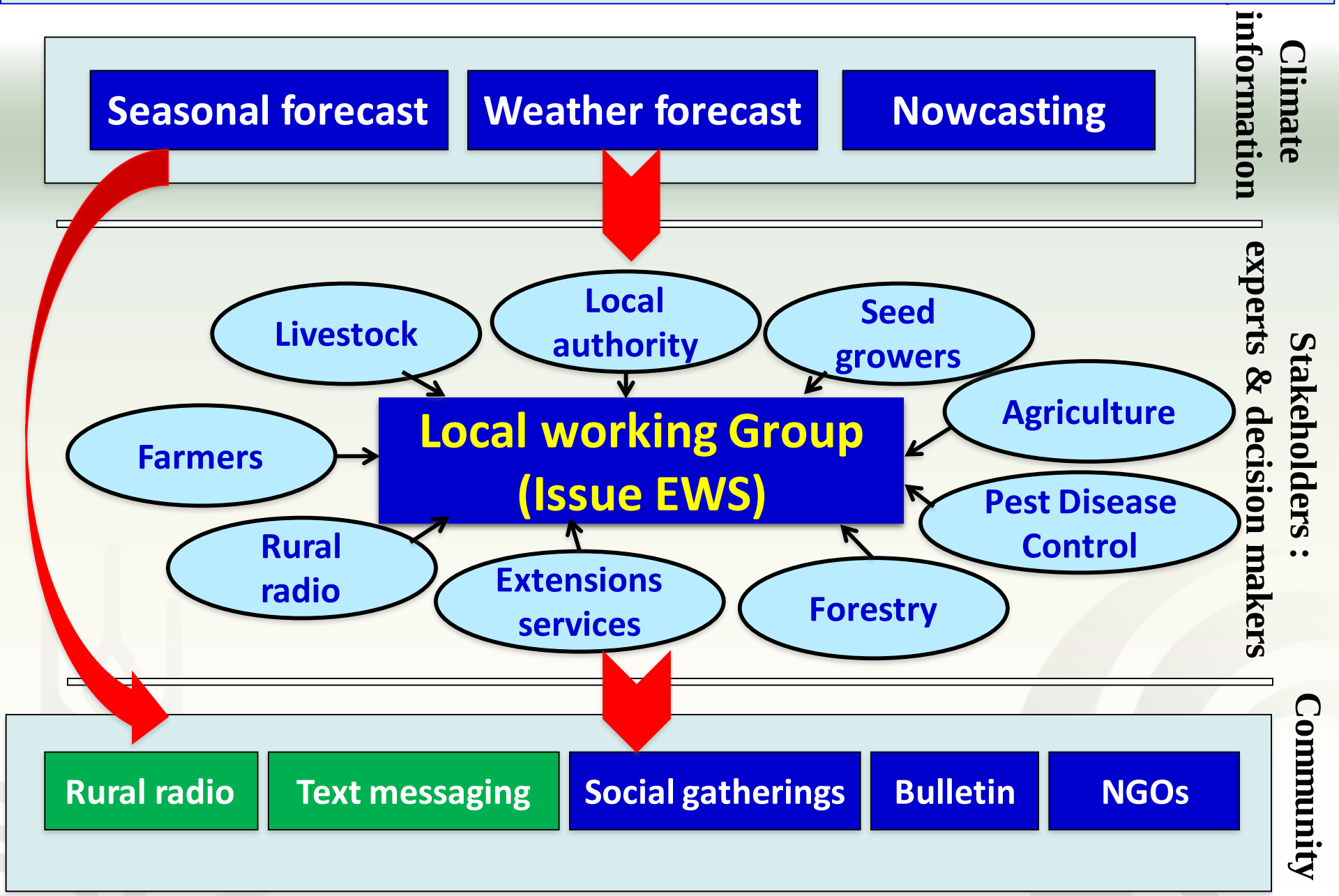
Updating seasonal forecast
- second cropping

Maturity/end season

Ten-day forecast
- optimum harvesting period
- rain during dry season

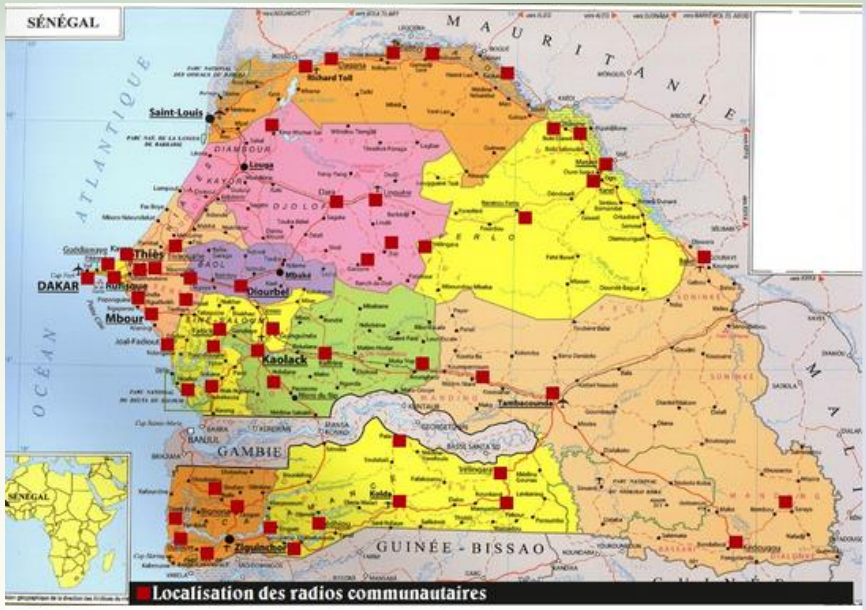


Climate information up-scaled across Senegal



Impact of climate information services in Senegal

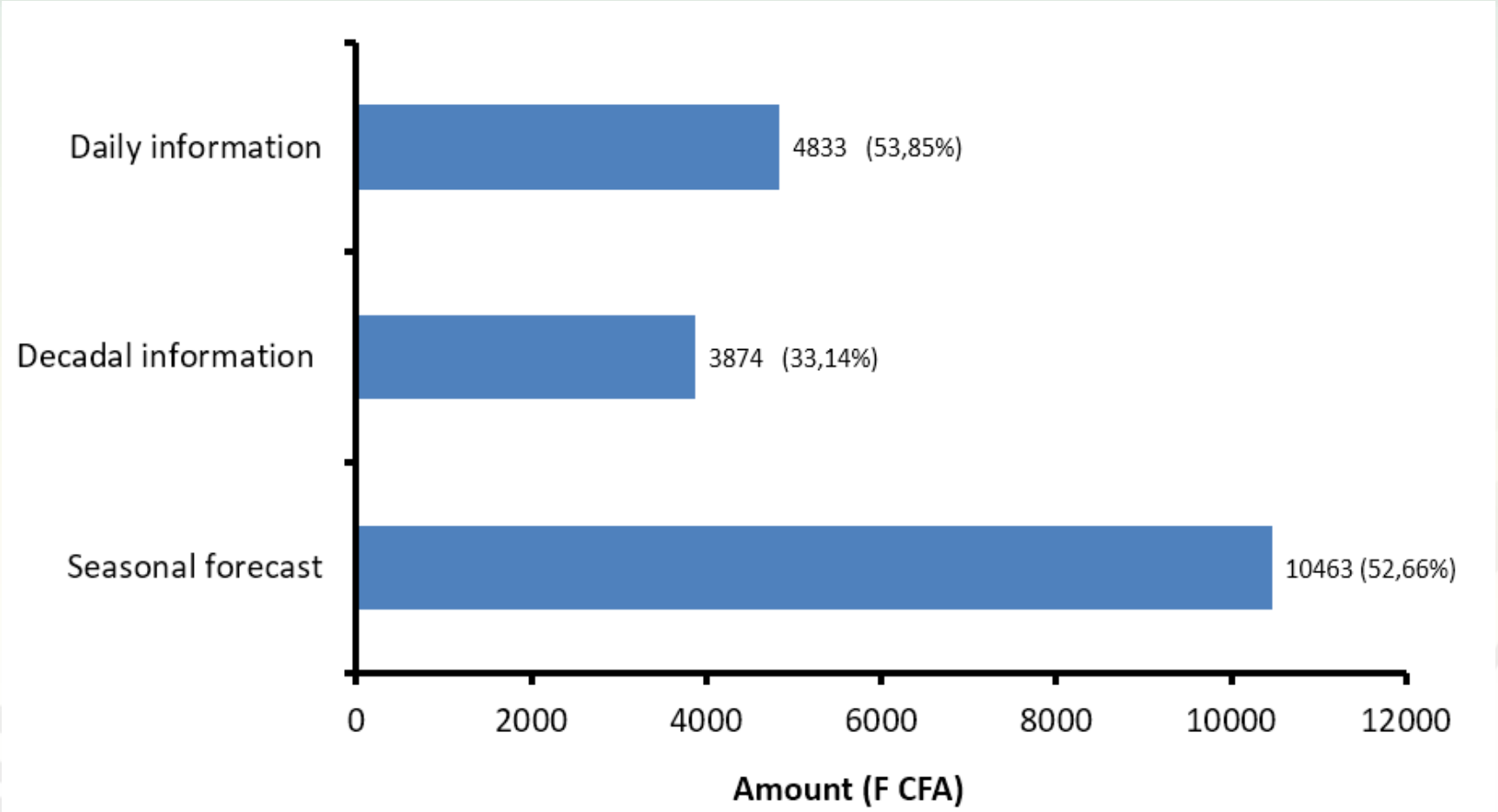
- Through 82 rural radios, mobile phone SMS, seasonal climate forecasts disseminated at national level to potentially reaching 7,4 millions rural people
- Climate information is now considered as an agricultural input in Senegal



Localisation des radios communautaires membres de l'URACS.

WTP in F CFA for CI in the CSVs - Burkina Faso

Farmers are willing to pay for Climate information in CSV - Burkina Faso

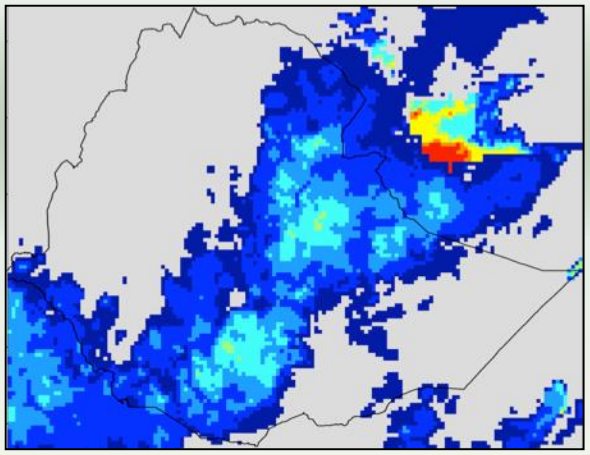


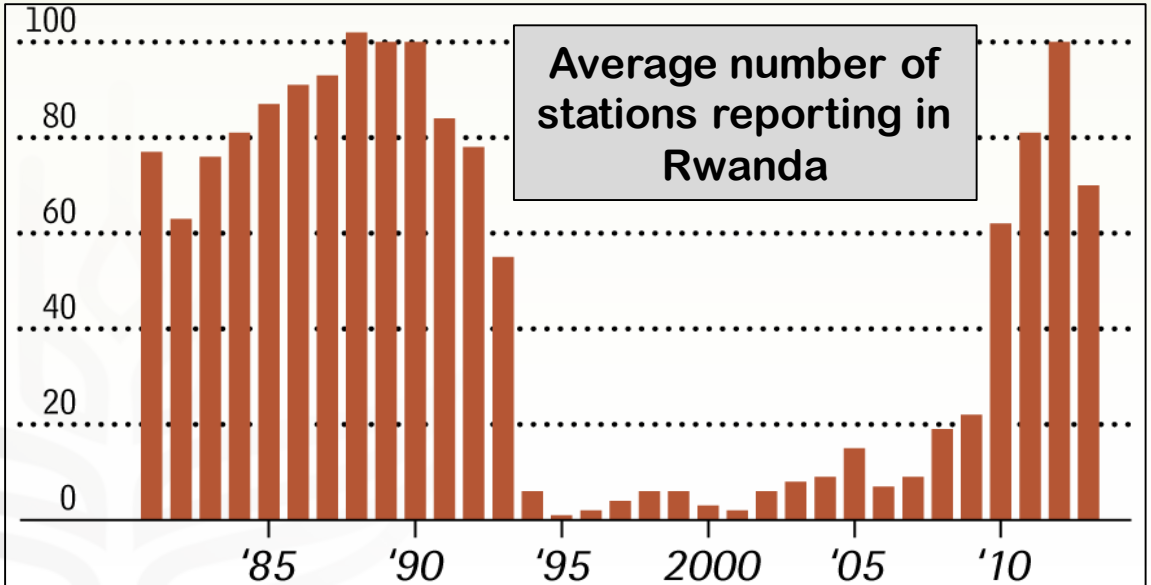
Challenges to scaling up PICSA in Rwanda

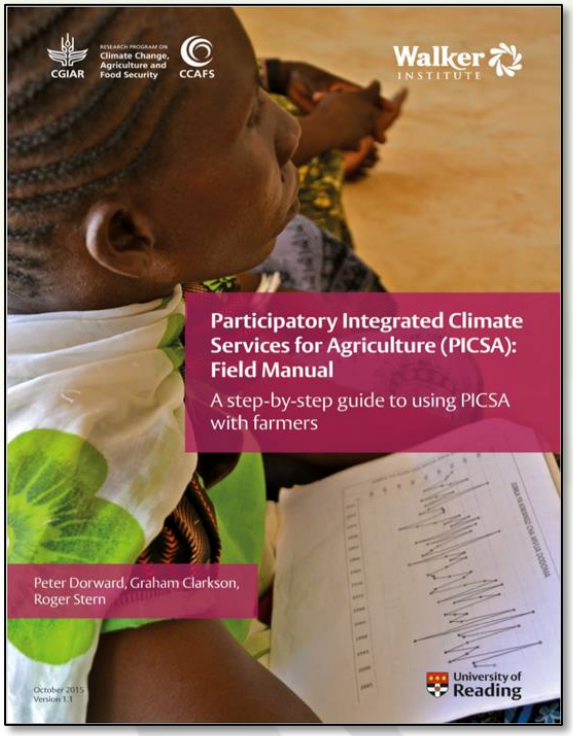
- PICSA initially tailored to traditional seasonal forecast presentation, not best practice
- PICSA requires good historical climate observations
- PICSA places heavy demands on NMS
- Workshops for 3 million rural households?

Meteo-Rwanda capacity to support PICSA

- *Usual NMS challenges compounded by 15-year collapse of observing system*
- *ENACTS:*
  - *High-quality merged gridded rainfall and temperature data*
  - *Derived products available through online "Maprooms"*
- *Agriculture and Food Security Maprooms* to provide **all** PICSA graphs for every 4km pixel

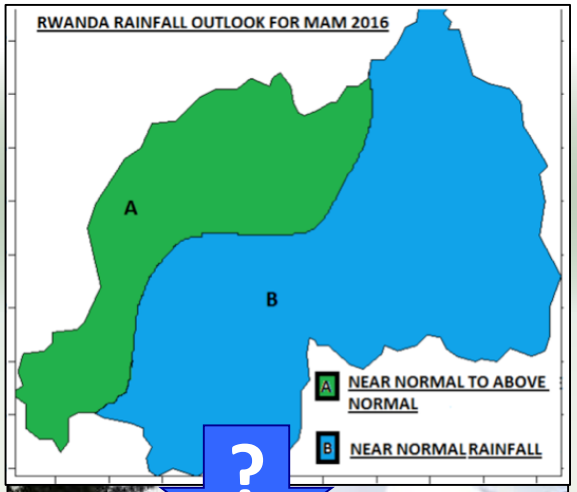


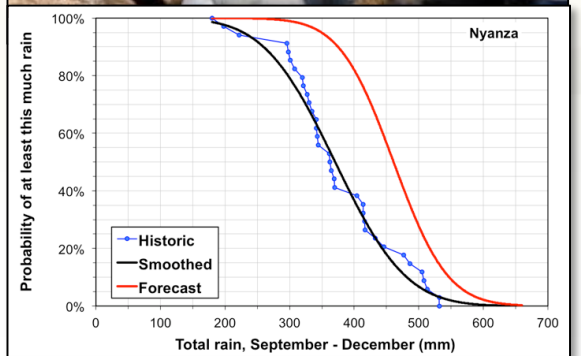




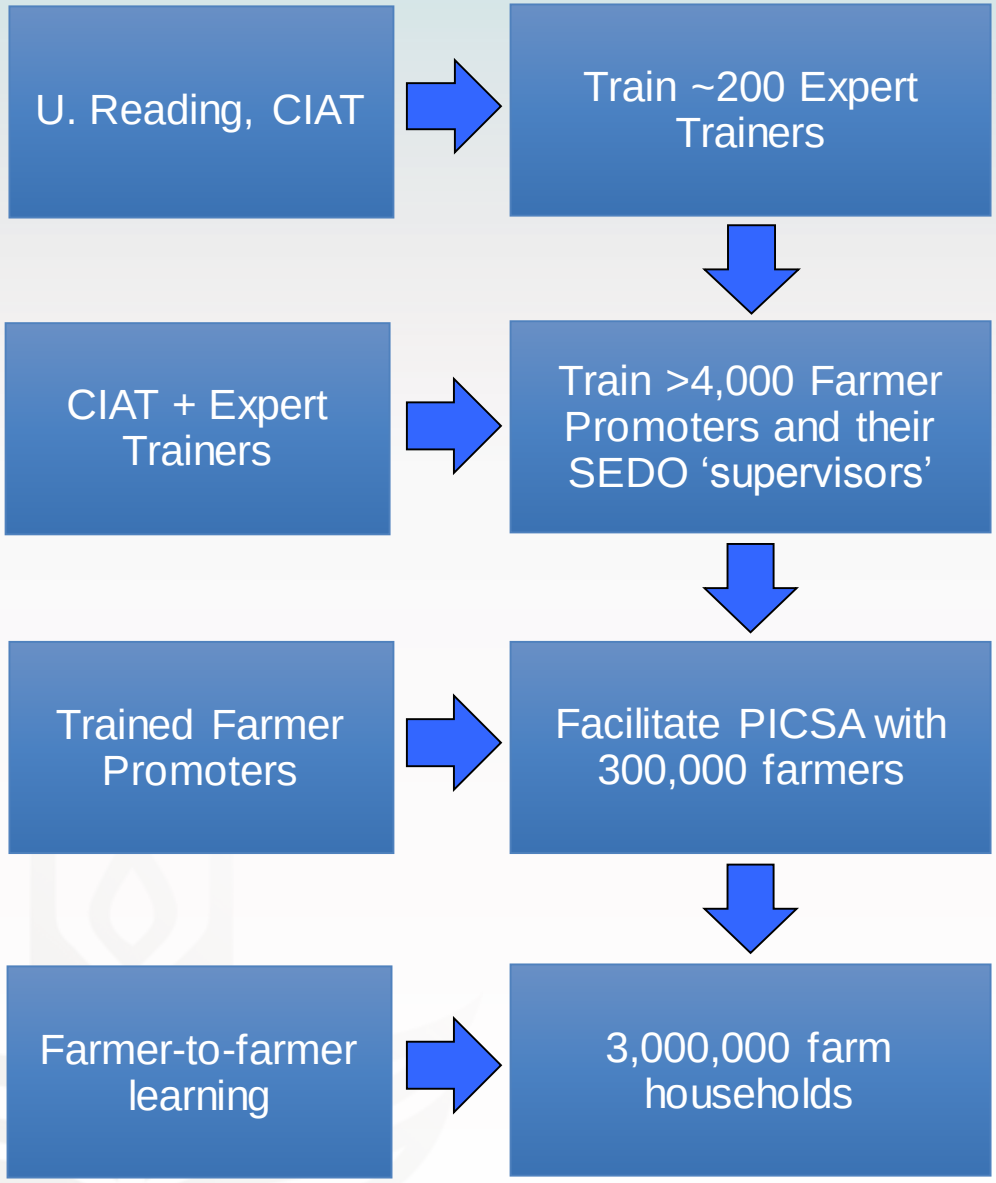
Extending treatment of seasonal forecasts

- **Gap between user needs and typical forecasts:**
  - Spatial scale
  - Season characteristics: timing, spells, extremes, water balance, …
  - Consistency between seasonal forecast and local history
  - Transparent communication of historic variability, forecast accuracy
- **Probability-of-exceedance format**
  - Complement to terciles
  - Present with historic observations and hindcasts
  - Potentially any relevant seasonal variables that show significant skill





How to reach 3 million farmers?



Mainstream into agricultural extension. Needs government buy-in.

Key lessons

- **Lack of complete set of climate database in countries**
  - To generate local-level tailored CIS
  - To cover other sub-sectors (Livestock, Fisheries)
- **Weak capacity of CIS stakeholders:**
  - Met agencies to technically develop salient CIS
  - Public and private sector actors to organise sustainable and large-scale dissemination schemes and mechanisms of CIS
- **Public-private business models for CIS dissemination**
  - To take on board specific needs and enable scalable and sustainable CIS dissemination for men, women and the youth

- **Research needed with focus on outcomes!**
- **Partnerships are crucial!**