A Case Study of Good Practice in Climate Services from India

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CCAFS and Climate Services

Adapting Agriculture to a Variable and Changing Climate

Technologies, practices, partnerships and policies for:
1. Adaptation to Progressive Climate Change
2. Adaptation through Managing Climate Risk
3. Pro-poor Climate Change Mitigation

Trade-offs and Synergies

- Improved Environmental Health
- Improved Rural Livelihoods
- Improved Food Security

Enhanced adaptive capacity in agricultural, natural resource management, and food systems

4. Integration for Decision Making
- Linking Knowledge with Action
- Assembling Data and Tools for Analysis and Planning
- Refining Frameworks for Policy Analysis

• What is CCAFS?
• CCAFS interest in climate services
• Why India’s AAS?
Background: History of India AAS

• 1932 – Division of agrometeorology started
• 1945 – Farmer weather bulletins began to be issued
• 1976 – Agromet advisory services at the State level initiated, using IMD short-range weather forecasts
• 1988 – National Center for Medium Range Weather Forecasting (NCMRWF) established to develop NWP models for forecasting 3-10 day weather
• 1991 – AAS initiated with 5 AAUs
• 2003 – Impact evaluation commissioned
Background: History of India AAS

- NCMRWF bulletins to farmers in 127 agroclimatic zones, through Agrometeorological Field Units (AMFU) in SAUs, their research stations, ICAR institutes
- 2007 – AAS transferred to IMD
- 2008 – District level advisories initiated
- 2011 – Experimental block level forecasts
- 2012 – Plans to scale up from 3 to 10 million farmers
Background: AAS Bulletins

• Location-specific forecasts of rainfall, $T_{\text{max}}$, $T_{\text{min}}$, cloud cover, wind – from a multi-model ensemble, every Tuesday and Friday

• Multi-disciplinary team of agricultural scientists assists AMFUs to prepare bi-weekly advisories

• Location- and crop-specific advisories, in local language: prevailing weather; soil & crop conditions; irrigation, fertilizer, pest control recommendations

• Disseminated through mass media; to select farmers by phone (SMS or voice messages), internet, or in person
Background: Communication Channels

IMD (Merged with NCMRWF AAS)

Fax, Phone, Internet,

Feedback from farmers, AAS units

Agromet Field Units

Farmers’ Feedback

All India Radio

Television Channels

Print Media

Personal Contact

FARMERS
Background: 2003-2007 AAS evaluation

• National Centre for Agriculture Economics and Policy Research, commissioned by NCMRWF

• 15 of the 127 AAUs

• 6 seasons during 2003–2007

• 80 farmers: 40 responding and 40 non-responding farmers

• 10-15% increase in yield

• 2-5% reduction in the cost of cultivation
India AAS Study by CCAFS

• Partnership with Indian Meteorological Department (IMD), State Agricultural Universities, ICRISAT

• Objectives:
  – Synthesize aspects of good practice that can guide investment in climate/weather services for farmers elsewhere
  – Strengthen evidence and transferrable lessons, by capturing what is happening at the village level and how it is impacting rural communities
  – Showcase as a case study of good practice
  – Not meant to quantify economic benefit
Study Methods

- Draws from Mali study
- AAS implementation:
  - Review of program documents
  - Interviews with IMD, Regional Met Centers, AMFUs, other institutional representatives involved in advisory development or communication
Study Methods

• Village component:
  – 6 states across India
  – Each state: random selection of 3 villages from different agroclimatic zones
Study Methods

- Focus groups in selected villages
- Disaggregated by gender
- Progress from general, to climate, to AAS
Study Methods

- Structured interviews with men and women

- Specific uses of AAS: information used, channels, perceived gaps, suggestions
AAS Bulletin outside a Farmers Union office in a village in Tamil Nadu. The one-page advisory is broken down into weather forecasts for the following 4 days in a tabular form for ease of reading and interpretation.
AAS Bulletin outside milk collection station in a village in Andhra Pradesh. AAS Bulletins in vernacular are put up in 5 commonly visited places in the village.
Farmer in a village in Tamil Nadu displaying the SMS he received with agro advisories for the week.
Preliminary Observations

• Clear distinction between farmers knowing about AAS and being able to use it for their purposes
Preliminary Observations

- In most cases, marginal farmers less able than “progressive farmers” to benefit from the advisories
  - Traditional knowledge considered sufficient to manage very small farms
  - Access constraints due to literacy or available time
  - Capital constraints prevent following recommended fertilizer or pesticide use
Preliminary Observations

• Women by far the least informed except in a few places where women's' groups were more active.

• Villages where women were more aware, also seem to be villages with overall greater awareness and use of advisories.

• Political factions in villages sometimes keep one group away from information.
Remaining tasks

• Data analysis
• Report
• Video to capture farmers’ experience (India and Mali)
• CSP-CCAFS-USAID-WMO Workshop on *Scaling Up Climate Services for Farmers in Africa and South Asia* (Dakar, 10-12 December)
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