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Forum for Agricultural Risk Management in Development

WEBINAR SERIES

Climate Services for Smallholder Farmers

By Dr. Jim Hansen (IRI, Columbia University and CCAFS, CGIAR)

Washington DC, United States, December 3rd , 2014

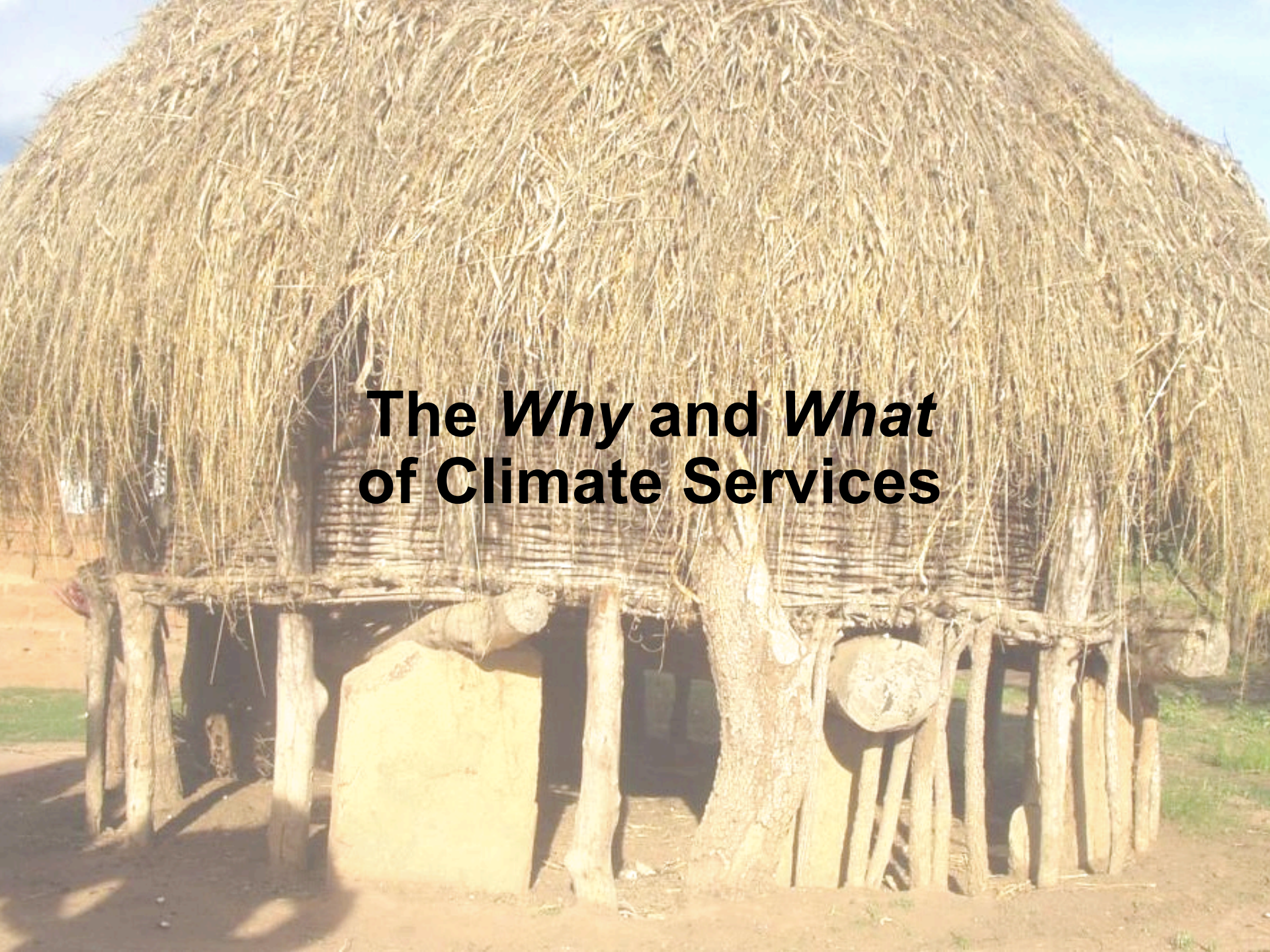
CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security CCAFS

Climate Services for Smallholder Farmers

Jim Hansen, Flagship 2 Leader: Climate Information Services and Climate-Informed Safety Nets

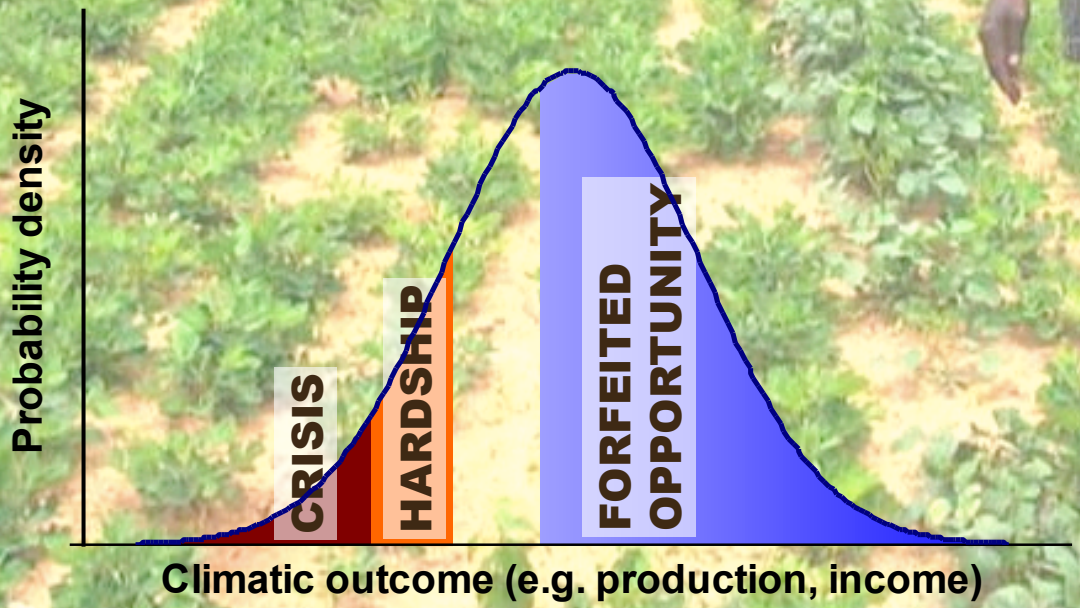
FARMD Webinar, 3 December 2014

FARMD


The *Why* and *What*
of Climate Services

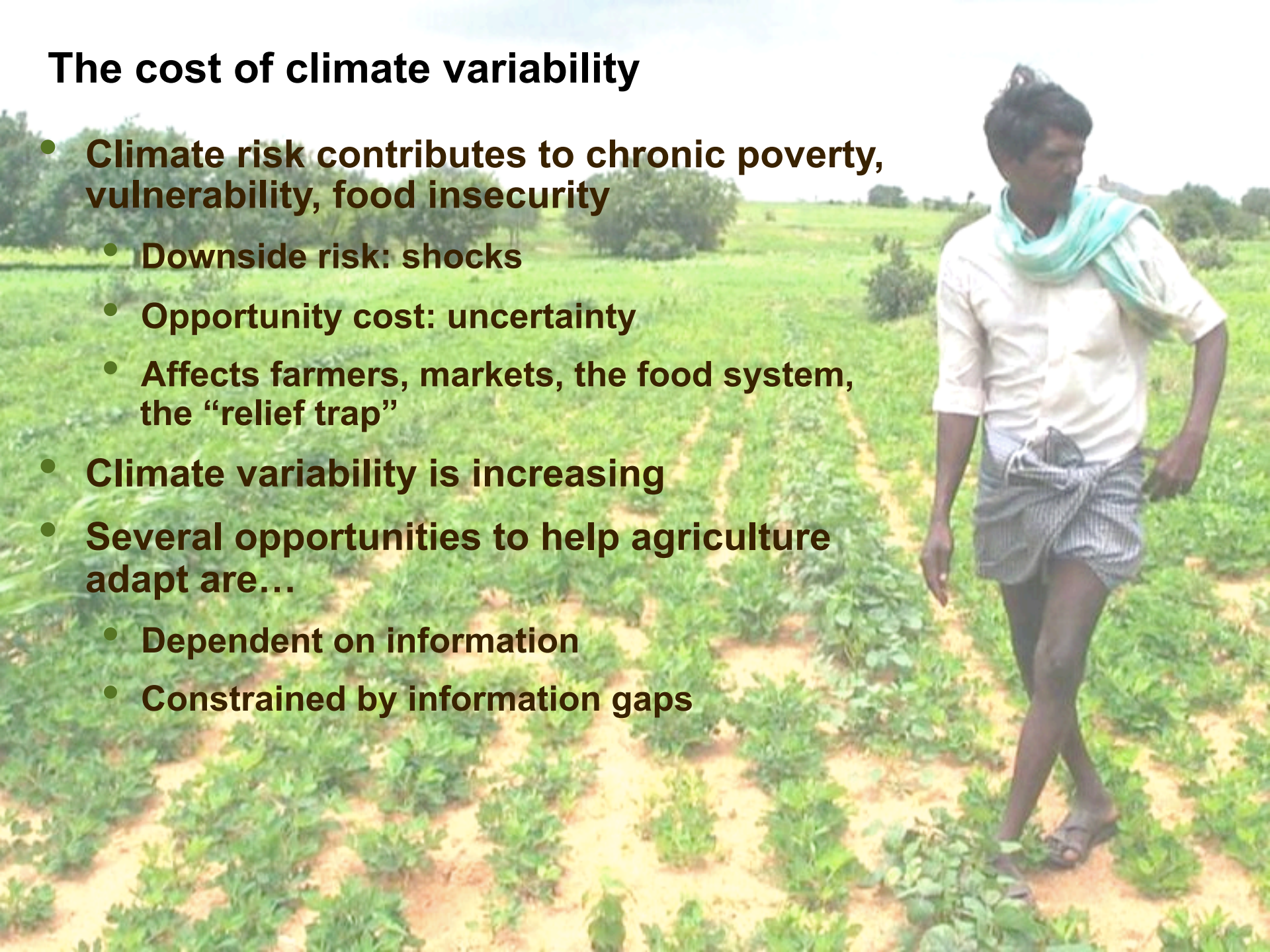
The cost of climate variability

- Climate risk contributes to chronic poverty, vulnerability, food insecurity
  - Downside risk: shocks
  - Opportunity cost: uncertainty
  - Affects farmers, markets, the food system, the "relief trap"



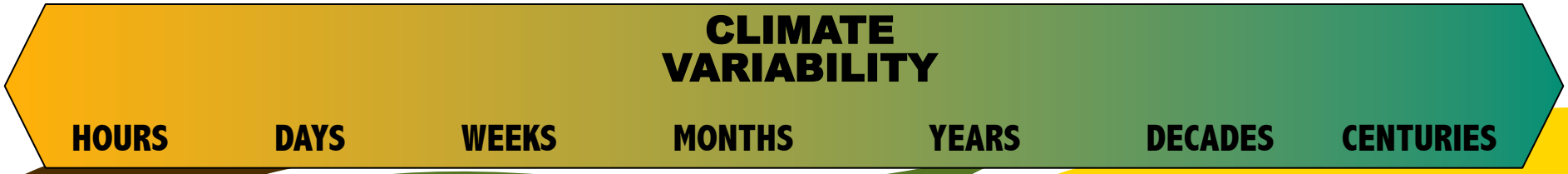
The cost of climate variability

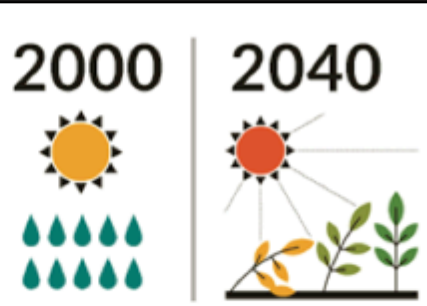
- Climate risk contributes to chronic poverty, vulnerability, food insecurity
  - Downside risk: shocks
  - Opportunity cost: uncertainty
  - Affects farmers, markets, the food system, the "relief trap"
- Climate variability is increasing
- Several opportunities to help agriculture adapt are…
  - Dependent on information
  - Constrained by information gaps



	Type of information	Vehicles for delivering information	Farmer decisions affected
WEATHER **Days to weeks**			
	• Observed rainfall and temperature • Daily forecasts up to one week ahead of time • Alerts on pests and diseases • Early warning of extreme weather events	• Mobile phones • Radio • Television	• Timing of planting and harvest • Timing of fertilizer, pesticide, and irrigation application • Protecting lives and property from extreme events

	Type of information	Vehicles for delivering information	Farmer decisions affected
CLIMATE VARIABILITY **Months to Years**			
	• Probabilities for seasonal rainfall and temperature conditions • Seasonal climate variables targeted to particular agricultural risks (dry spells, rainy season start date, etc) • Historical variability of climate variables	• Workshops with experts • Conversations with agricultural extension agents (farm educators)	• Selecting crops and varieties • Livestock stocking rates and feeding strategies • Intensity of input use (fertilizer, pesticides) • Labor or marketing contracts • Intensifying and diversifying crops • Diversifying sources of income



	Type of information	Vehicles for delivering information	Farmer decisions affected
CLIMATE CHANGE **Decades or longer**			
	• Projections of future rainfall and temperature • Historical trends in rainfall and temperature • Historical changes in extreme events	• Workshops with researchers, agricultural extension agents, and meteorological services.	• Major capital investments (buying or expanding landholding, irrigation systems, farm equipment etc) • Changing farming system or livelihood strategy • Deciding whether or not to farm

From weather to climate services

- Needs depend on decisions
- With increasing lead time:
  - Decisions more context- and farmer-specific
  - Information more uncertain, more complex
  - Therefore the scope of services needed increases
- Climate services more than an extension of weather services

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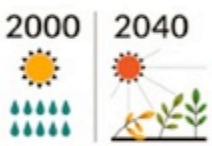
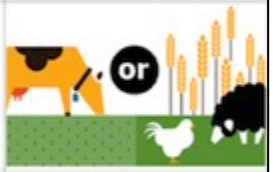
CLIMATE CHANGE **Decades or longer**	 • Projections of future rainfall and temperature • Historical trends in rainfall and temperature • Historical changes in extreme events	 • Workshops with researchers, agricultural extension agents, and meteorological services.	 • Major capital investments (buying or expanding landholding, irrigation systems, farm equipment etc) • Changing farming system or livelihood strategy • Deciding whether or not to farm

Integrating climate information and agricultural advisory services

- Making climate information more farmer-relevant
- Making agricultural advisory services more climate-smart

Key challenges to reaching smallholder farmers, at scale

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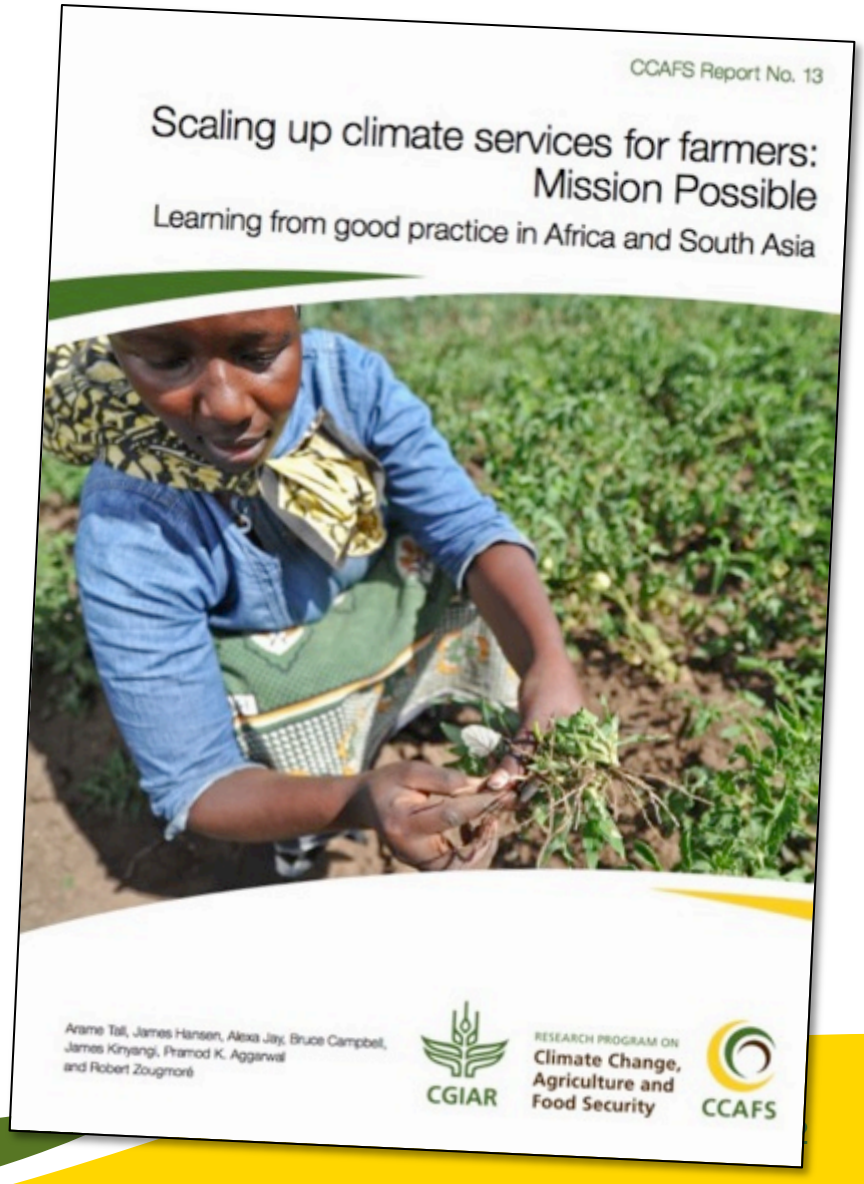
- *Salience*: tailoring content, scale, format, lead-time to farm decision-making
- *Legitimacy*: giving farmers an effective voice in design and delivery
- *Access*: providing timely access to remote rural communities with marginal infrastructure
- *Equity*: ensuring that women, poor, socially marginalized benefit
- *Integration*: climate services as part of a larger package of support

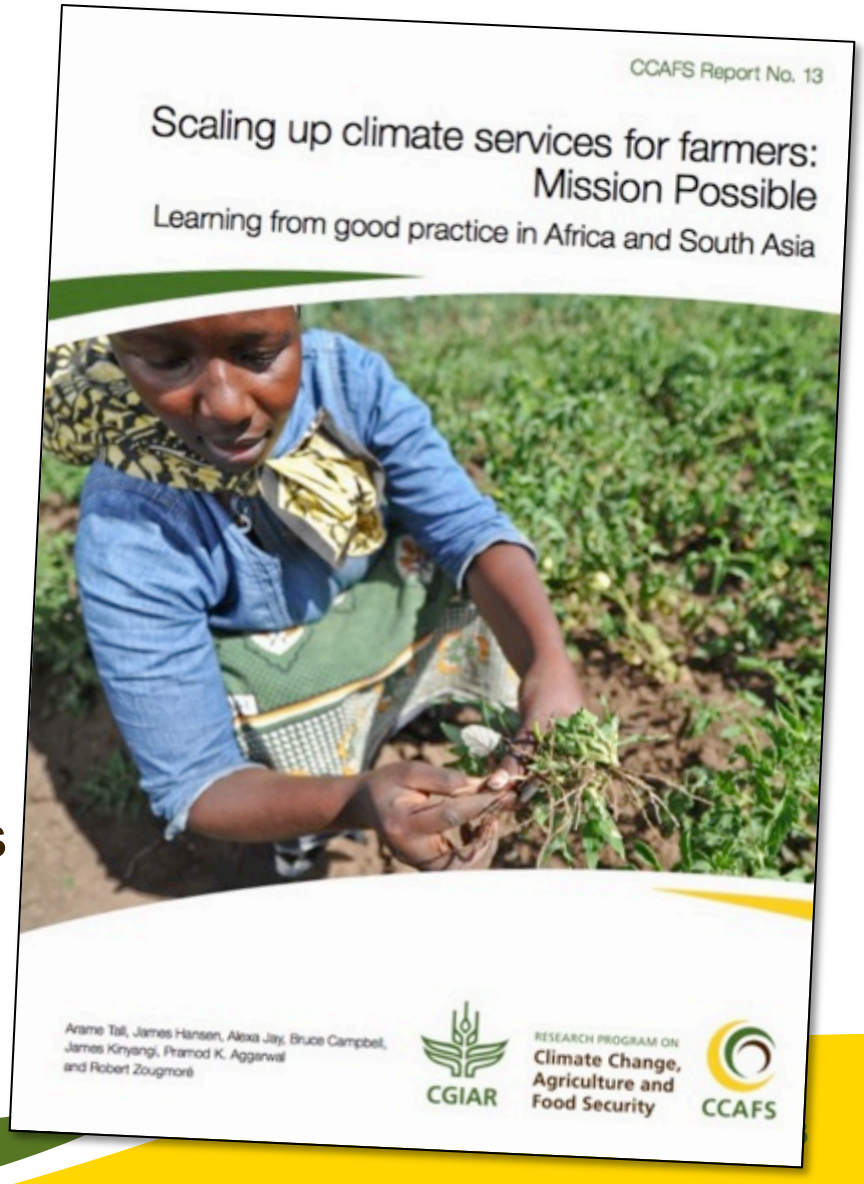
Learning from Good Practice

- Reviewed 18 case studies
- Mali, India national agromet advisory program evaluations
- How do they address the 5 key challenges?
- Common approaches?
- Generalizable lessons?



Good practice lessons

1. Enabling institutional frameworks
2. Local scale information
3. Seamless forecast products
4. Giving farmers a voice
5. Local and scientific knowledge
6. Face-to-face communication
7. Scalable communication channels
8. Gender and social equity

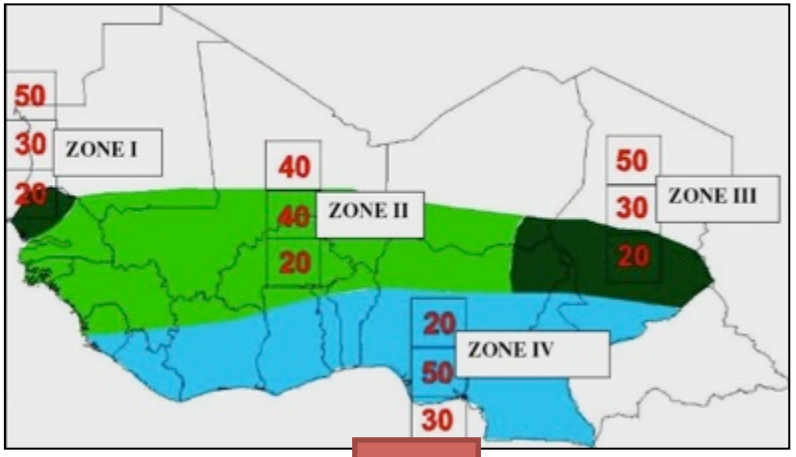


What will it take for climate services to work for smallholder farmers – at scale?

- **Hydro-met service capacity to provide farmer-relevant information**
- **Partnerships, processes for co-production of services**
- **Scalable communication channels**
- **Engage and target the vulnerable**
- **Balance scalable services with context-specific needs**

Hydro-met service capacity to provide farmer-relevant information

- Salience challenges:
  - Spatial scale
  - Beyond seasonal averages
  - Uncertainty, communicated in context of history
  - Impacts and management
- Challenges that developing country NHMS face:
  - Sparse historic observations
  - Data policy, incentives
  - Human capacity



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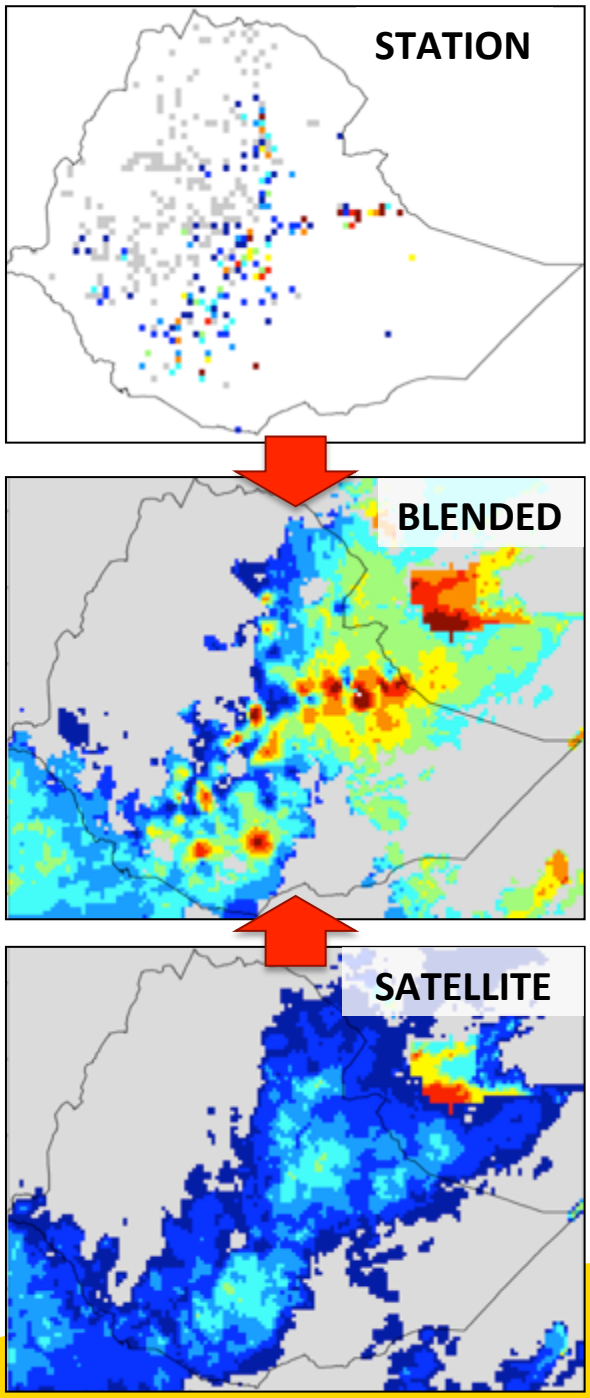
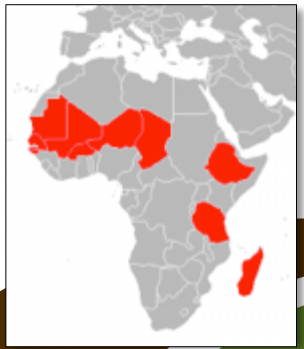
Hydro-met service capacity to provide farmer-relevant information

ENACTS (Enhancing NAtional ClimaTe Services):

- Started in Ethiopia
- Satellite + station, 10 km grid, 31 year complete record
- Data Library platform to build “maproom” products from data
- Owned, implemented by NHMS





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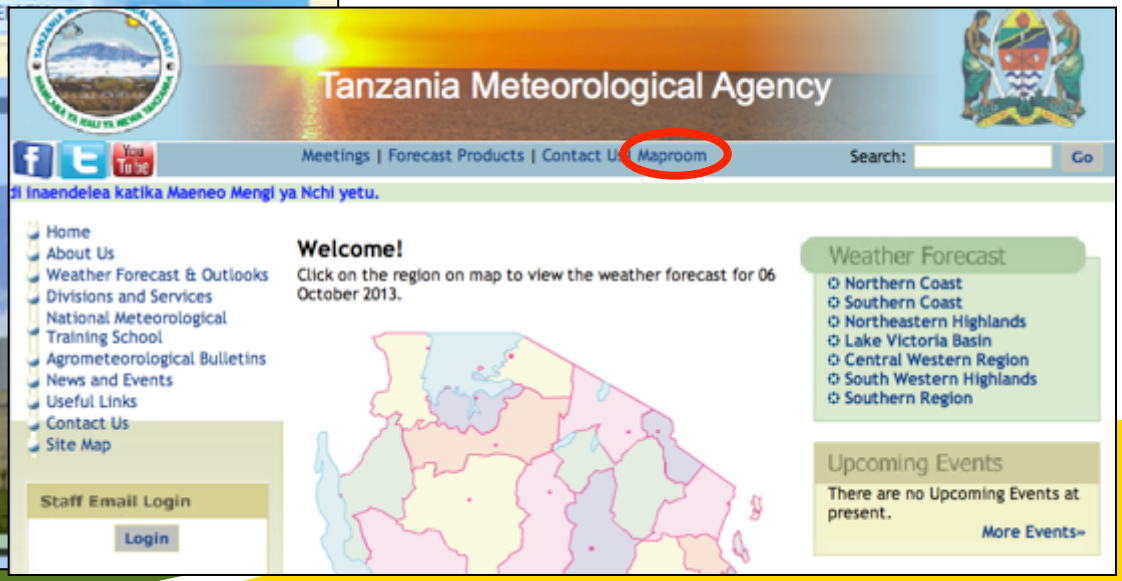
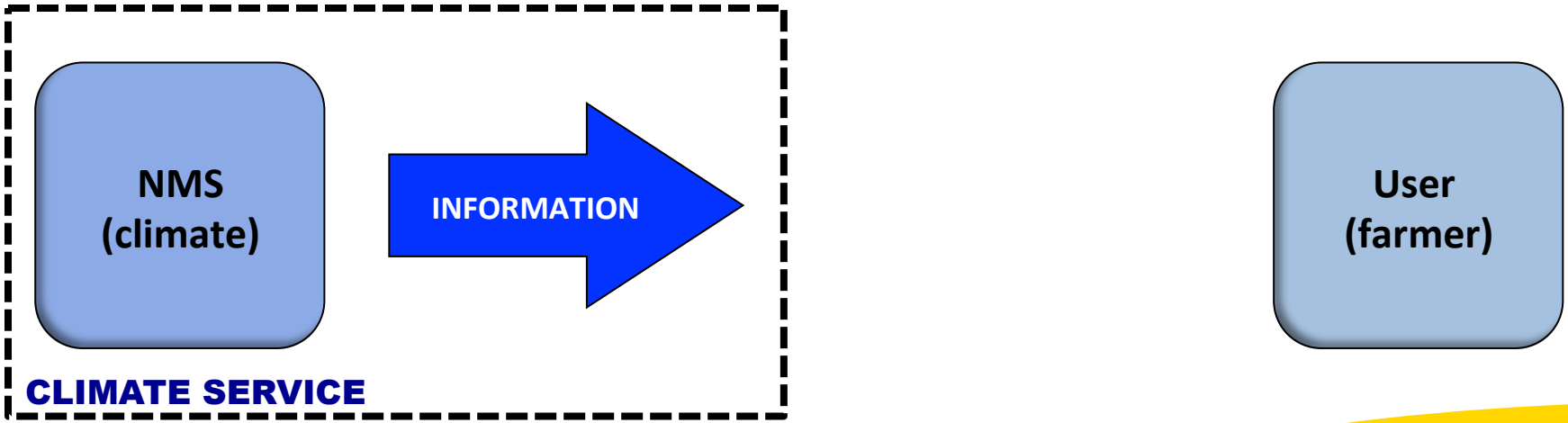
- Enables NHMS to customize, generate, disseminate locally relevant information without over-taxing limited human resources.

- Implications for climate services for farmers



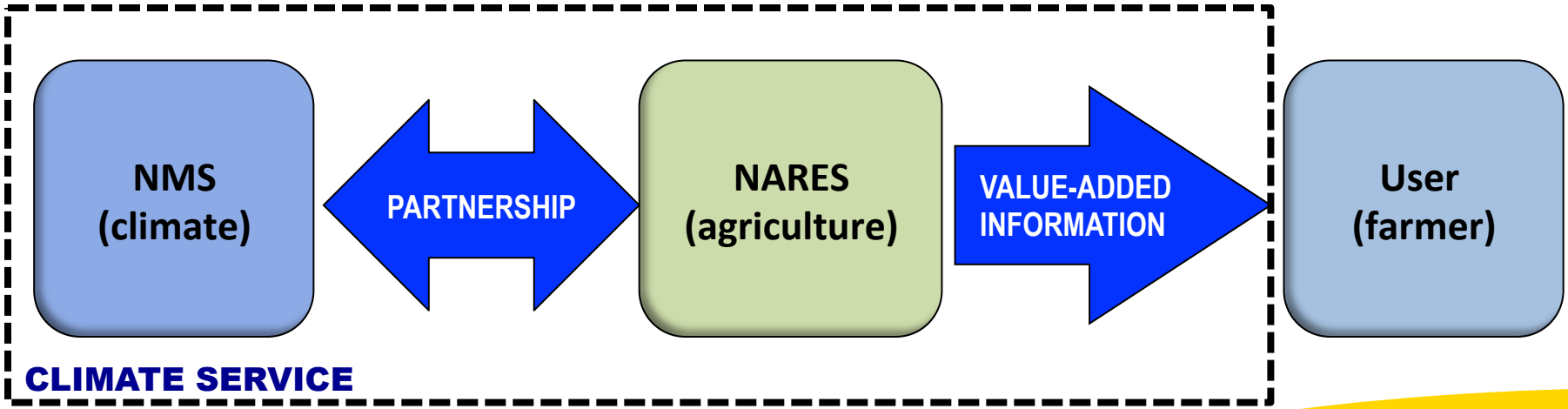
Institutional arrangements, partnerships, processes for co-production

- Limitations of supply-driven climate services



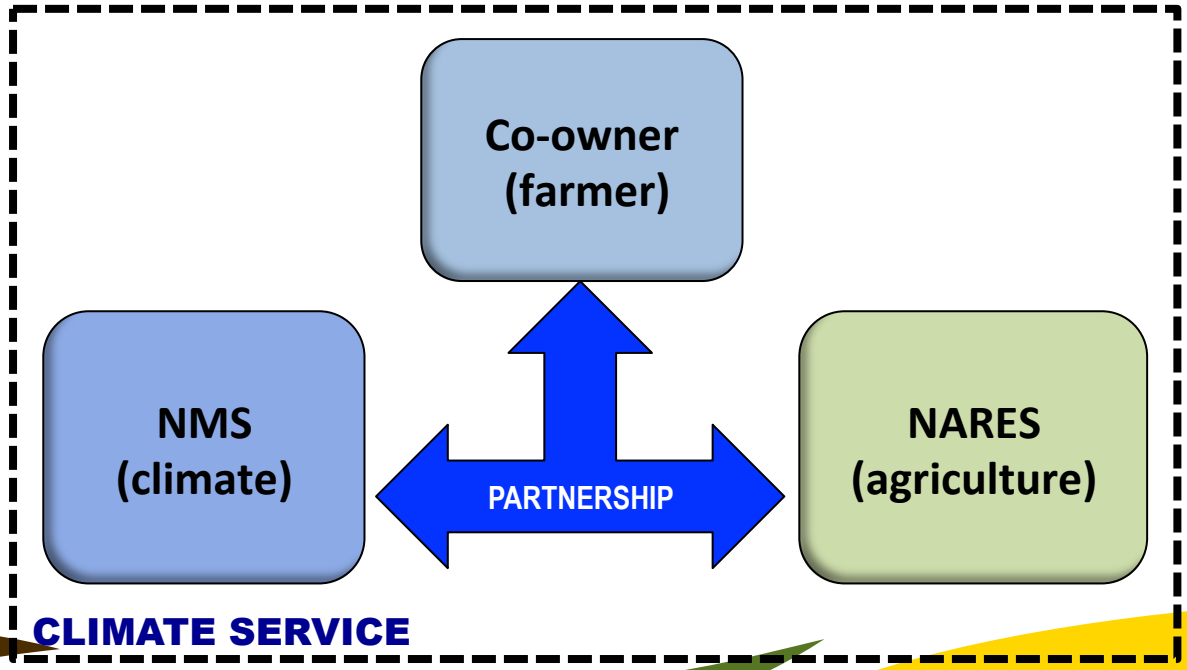
Institutional arrangements, partnerships, processes for co-production

- Limitations of supply-driven climate services
- Expand the boundary to agricultural research and development
  - Multi-agency climate services governance framework
  - Adopted by GFCS



Institutional arrangements, partnerships, processes for co-production

- Limitations of supply-driven climate services
- Expand the boundary to agricultural research and development
- Expand the boundaries to give farmers an effective voice

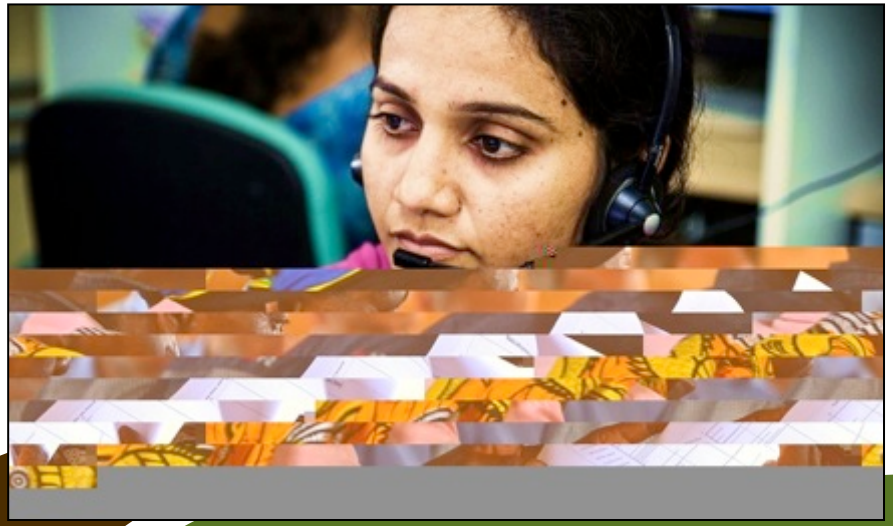


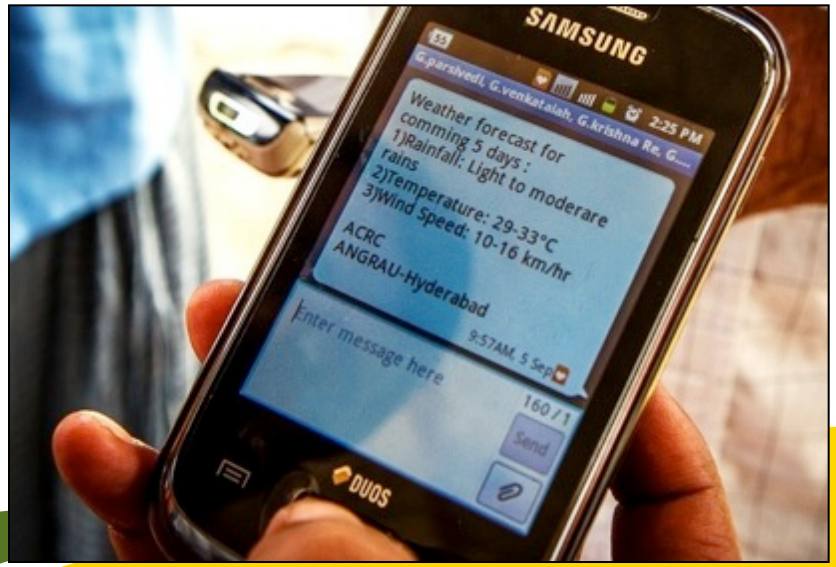
Exploit scalable communication channels

- Institutional channels
  - Face-to-face interaction for seasonal planning
  - Training for agricultural extension, other intermediaries

Exploit scalable communication channels

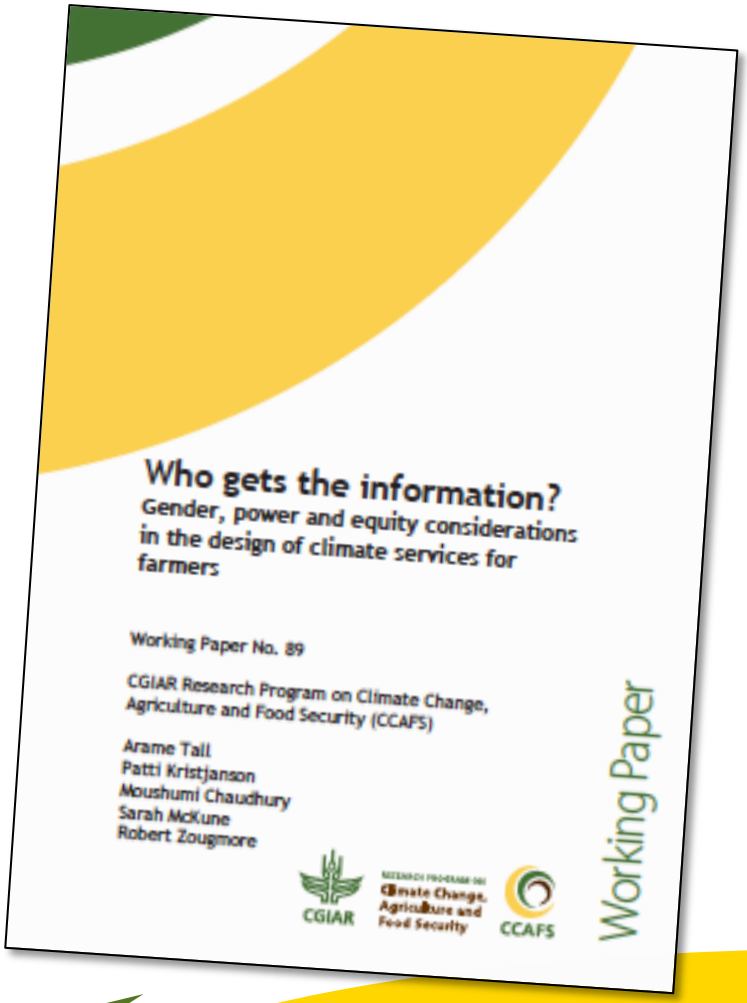
- Institutional channels
- Media and ICT
  - Rapid dissemination of short-lead information
  - Complement face-to-face communication





Target and involve the vulnerable and marginalized

- *One size does not fit all.*
- Gender-responsive:
  - Climate information
  - Communication methods
  - Response strategies
- Engage, assess, target
- Incorporate gender challenges into training for intermediaries



Balancing scalable services with context-specific needs?

- The dilemma
- Ensure farmers, particularly those who are marginalized and vulnerable, have a voice
- Easy wins that are relevant to many
- Iterative assessment and refinement process

Thank you

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Q&A

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