



RESEARCH PROGRAM ON
**Climate Change,
Agriculture and
Food Security**



Workshop Report: Developing a Methodology to Communicate Climate Services for Farmers At Scale

June 2013

Sumiko May, James Hansen and Arame Tall



Correct citation:

May, S., J. Hansen, A. Tall, 2013. Workshop Report: Developing a Methodology to Communicate Climate Services for Farmers At Scale. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark. Available online at: www.ccafs.cgiar.org.

CCAFS Workshop Reports aim to disseminate interim climate change, agriculture and food security research and practices and stimulate feedback from the scientific community.

Published by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

CCAFS is a strategic partnership of the CGIAR and the Earth System Science Partnership (ESSP). CGIAR is a global research partnership for a food secure future. The program is supported by the Canadian International Development Agency (CIDA), the Danish International Development Agency (DANIDA), the European Union (EU), and the CGIAR Fund, with technical support from the International Fund for Agricultural Development (IFAD).

Contact:

CCAFS Coordinating Unit - Faculty of Science, Department of Plant and Environmental Sciences, University of Copenhagen, Rolighedsvej 21, DK-1958 Frederiksberg C, Denmark. Tel: +45 35331046; Email: ccaafs@cgiar.org

Creative Commons License



This Workshop Report is licensed under a Creative Commons Attribution – NonCommercial–NoDerivs 3.0 Unported License.

Articles appearing in this publication may be freely quoted and reproduced provided the source is acknowledged. No use of this publication may be made for resale or other commercial purposes.

© 2012 CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

DISCLAIMER:

This Workshop Report has been prepared as an output for Theme 2: Adaptation through managing climate risk under the CCAFS program, and has not been peer reviewed. Any opinions stated herein are those of the author(s) and do not necessarily reflect the policies or opinions of CCAFS, donor agencies, or partners.

All images remain the sole property of their source and may not be used for any purpose without written permission of the source.

Abstract

This report summarizes the proceedings of the workshop; “Developing a Methodology to Communicate Climate Services At Scale Through Intermediaries for Farmer Communities in Africa and South Asia,” held in Nairobi, Kenya on June 12-14, 2013. The workshop brought together experts from different countries and institutions to work together to develop tools and guidance materials to train various intermediary groups in climate service communication, including public extension services, professional communicators, media, rural radios, NGOs, CBOs, farmers’ organizations, women self help groups and other boundary organizations. Participants developed an outline of potential training modules, and committed to contributing and further developing materials for a training resource guidebook.

Keywords:

climate services; agrometeorological advisory services; training curriculum

About the authors

Sumiko May is an Independent Consultant working for CCAFS Theme 2: Adaptation through managing climate risk. Contact: sumiko_g@hotmail.com, 110, E5 8JA, London, UK.

James Hansen is a Research Scientist at the International Research Institute for Climate and Society (IRI), where he leads CCAFS Theme 2: Adaptation through managing climate risk. He has worked on managing climate-related risk for agriculture and food security since 1996. Contact: Jhansen@iri.columbia.edu, IRI, The Earth Institute, Columbia University, Lamont Campus, 61 Route 9W, Monell Building, Palisades, NY 10964-8000, USA.

Arame Tall is a Scientist working for CCAFS Theme 2: Adaptation through managing climate risk, based at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). Dr. Tall's work focuses on strengthening the contribution of the CGIAR to climate services for agriculture. Contact: A.tall@cgiar.org, ICRISAT Patancheru 502324, Andhra Pradesh, India.

Acknowledgements

The international workshop on “Developing a Methodology for the Communication of Climate Services At Scale through Intermediaries for Farmer Communities in Africa and South Asia,” held in Nairobi, Kenya 12-14 June 2013, was jointly organized by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and the International Livestock Research Institute (ILRI). Due thanks to all participating organizations.



Participants at the workshop on Developing a Methodology for the Communication of Climate Services At Scale through Intermediaries for Farmer Communities in Africa and South Asia.

Contents

Introduction.....	7
Workshop Programme	9
Session 1. Workshop Opening	9
Session 2. Clarifying Needs and Roles	11
Session 3. Agreeing on Purposes and Pieces	13
Session 4. Training Implementation Issues.....	13
Session 5. Risk, Variability and Probability.....	14
Session 6. Using Climate Information for Decision-Making.....	15
Sessions 7 and 8. Core Principles, and Foundational Knowledge	16
Session 9. Equity Challenges	16
Session 10. Participatory Methods	17
Session 11. Developing a Core Curriculum	18
Session 12. Workshop Closing.....	19
Conclusions.....	19
Appendix 1: Workshop Agenda	21
Appendix 2: Workshop Participants	23
Appendix 3: Training Material Draft Outline.....	24

Introduction

Smallholder farmers in the developing world are particularly vulnerable to the impacts of climate fluctuations and weather extremes. Although farming communities throughout the world have survived by mastering the ability to adapt to widely varying weather and climatic conditions, increasingly erratic climate variability and the rapid pace of other drivers of change are overwhelming indigenous knowledge and traditional coping practices. Effective climate information and advisory services offer great potential to inform farmer decision-making in the face of increasing uncertainty, improve management of climate-related agricultural risk, and help farmers adapt to change.

Growing interest on the part of several development organizations, and development of the UN Global Framework for Climate Services, have led to a recent surge of interest in climate services for the developing world. Efforts to improve the livelihoods of smallholder farmers increasingly include in climate services. Improving climate-related information for agriculture and food security is part of the agenda of the CGIAR research program on Climate Change, Agriculture and Food Securing (CCAFS), under its Theme, “Adaptation through Managing Climate Risk.” CCAFS has identified several challenges, beyond the provision of quality climate information, which must be addressed if smallholder farmers are to benefit from investments in climate services:

- *Salience*: tailoring content, scale, format and lead-time to farm-level decision-making;
- *Access*: providing timely access to remote rural communities with marginal infrastructure;
- *Legitimacy*: giving farmers an effective voice in the design and delivery of climate services;
- *Equity*: ensuring that women, poor and socially marginalized groups are served; and
- *Integration*: integrating climate services within the larger package of agricultural development and support for farmers.

The experience of CCAFS and several other programs and organizations, in working with smallholder farmers at a pilot level, provide valuable insights about how to design, communicate and support the use of climate information services, and demonstrate that

farmers can take advantage of value-added climate and weather forecasts in their farm-level planning¹. These pilot activities have typically involved intensive interaction between researchers and farming communities, and reached a few hundred farmers. Extending the benefits to hundreds of thousands or millions of smallholder farmers in remote rural communities with poor infrastructure is a daunting task. There is clearly a need to extend the knowledge and successful approaches from these pilot activities to intermediaries – public agricultural extension programs, development NGOs, faith-based organizations, farmer associations and media personnel – who farmers already know and trust for other types of information and support.

The CCAFS workshop on “Developing a methodology for the communication of climate services at scale through intermediaries for farmer communities in Africa and South Asia,” Nairobi, Kenya, 12-14 June 2013, was a step towards consolidating experiences and developing materials to train intermediaries so that they can effectively communicate climate information and support its use by smallholder farmers. The workshop aimed to identify and begin to consolidate tools, approaches and methods that can be used to train intermediaries, who work with farmers, to enable them to communicate climate-related information and guidance, and serve as the ‘missing link’ between at risk communities and producers of climate information. Objectives were to:

- Share experiences, approaches for communicating complex climate information with farmers.
- Understand training needs and interest of organizations wanting to bring climate services into their ongoing support for farmers.
- Develop a consensus structure of a training curriculum that can be adapted to participants’ needs and support upscaling of climate services for farmers.

¹ For examples of successful pilot experiences supporting farmers with climate services, please refer to: Tall A, Jay A and Hansen J.W., 2013. Scaling Up Climate Services for Farmers in Africa and South Asia Workshop Report. CCAFS Working Paper no. 40. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark. (Available online at:

The workshop brought together experts and potential users of training from a range of countries and institutions to work toward developing training tools for intermediaries.

Workshop Programme

The workshop agenda (Appendix 1) was broken down into twelve sessions over three days. Sessions on the first day set the stage, and covered the rationale and objectives of the workshop, needs and roles of the various types of stakeholders represented, and the challenges of implementing training for intermediaries to communicate climate services at scale. The workshop agenda was adjusted in response to a preliminary consensus outline of topics that address the training needs for climate communicators working with farmers, developed in Session 3. Sessions 5-10, from Day 2 through the middle of Day 3, dealt with the individual topics within the consensus outline. An interactive agenda was designed to encourage open dialogue and an exchange of ideas. Most sessions included breakout group discussions, followed by report-back to plenary. Sessions focusing on particular training topics were typically introduced with short presentations by an expert with specific experience in addressing that topic. Discussions emphasized identifying approaches, tools and resources that could contribute to training.

Session 1. Workshop Opening

The workshop was opened by Peter Craufurd, who gave a welcome address. Jim Hansen then summarized how climate services fit within the agenda of the CGIAR research program on Climate Change, Agriculture and Food Security (CCAFS). CCAFS Theme 2, “Adaptation through managing climate risk,” has a strong focus on climate services for agriculture and food security management, because most options for improving the management of climate-related risk and building the resilience of smallholder farmers depends on information and can be constrained by lack of access to relevant climate-related information. Farmers make decisions that are impacted by climate variations on a range of time scales. The type and time scale of information that is relevant depends on the time horizon of the decision. As lead time increases from the weather time scale of a few weeks, to months and seasons (associated with climate variability), to decades or longer (associated with climate change), Hansen proposed

that: the information tends to become more uncertain and hence more complex, agricultural decisions tend to become more context- and farmer-specific, and hence the communication challenge and the scope of services required increases. CCAFS Theme 2 work on climate services for farmers includes: identifying and addressing key challenges to farmers' benefitting, pilot participatory demonstration and evaluation, assessing and synthesizing good practice, and working with partners to upscale climate services for smallholder farmers. The program has learned a lot about how to design, communicate and support the use of climate information for stallholder farmers. Scaling up requires sharing that knowledge and experience with intermediaries (e.g., agricultural extension programs, development NGOs) that farmers already know, trust, and turn to for other types of information and support. Hansen presented the objectives of the workshop. He then proposed and invited debate about a few assumptions; that the workshop would include a non-exclusive emphasis on the seasonal to sub-seasonal time scale, interactive processes with farmers in group settings, a training audience comprised largely of professionals who already interact with farmers, and the goal of benefitting large numbers of smallholder farmers. He also proposed that training should not be constrained to climate information products, formats or scales that are currently widely available.

Emma Visman facilitated an icebreaker activity aimed at encouraging participants to reflect and understand where they were positioned within the chain of climate services. This process fostered dialogue and set the tone for what was designed as a participatory workshop.

KPC Rao gave a presentation on "Empowering Farmers to Confront Climate Risks: Towards Operational Climate Services" (on behalf of Arame Tall) that outlined what effective climate services require, beyond the provision of climate information. The presentation highlighted the important roles that different stakeholders must play – from national hydro-meteorological services, to national agricultural research systems, to communication and boundary organizations, to users at the national and farm levels. Dr. Rao emphasized the importance of identifying the specific needs of the different stakeholders, the importance of addressing issues of equity, and the need for feedback. He then discussed the challenge of effective two-way communication that reaches "the last mile;" and available options that include SMS in local languages, forecast bulletin boards in strategic locations, NGOs and CBOs that act as boundary organizations, places of worship, water boreholes (for women), and rural radio. He

presented participatory methods that can help communicate the uncertainties that are inherent in climate prediction. The presentation concluded that research and experience has now shown that it is possible to reach millions of farmers with salient and downscaled climate information and advisory services, and that the time has now come to scale-up.

Sumiko May concluded Session 1 with a presentation of a background paper that set the stage for the workshop by providing an overview and synthesis of past and present climate communication and training approaches. The presentation made recommendations on how the process should be addressed as well as a number of considerations that should be included within workshop discussions, such as issues of intermediary selection, trust, equity and the importance of a two-way communication between farmers and scientists. It outlined the existing opportunities and challenges of training intermediaries to meet the climate information needs of farmers as well as a number of examples of existing tools and materials. The presentation concluded by making recommendations for training to be carried out using a “dynamic approach centred on a two-way participatory workshop for exchange of information, knowledge and ideas and the co-production of information and services, as well as the use of participatory games to facilitate a learning by doing approach.”

Session 2. Clarifying Needs and Roles

A presentation from Roger Stern on “Developing Approaches to Support Smallholder Planning and Decision Making through Use of Climate and Weather Information” summarized experience with providing farmers in Zimbabwe and Tanzania with climate and weather information. Their approach involves five phases of activity at different points in the calendar. The first phase focuses on analysis of historic climate data, well in advance of the growing season. Graphs, tables and pictures provide a basis for farmers and extension staff to discuss variability and any evidence of trends in seasonally integrated meteorological variables (i.e., temperature; rainfall totals; the start, end and length of the rainy season; dry spells; extreme events) that are important to agriculture. The second phase, before the growing season, involves training extension and NGO staff in topics that include analysis of historic data and its use with farmers, the basis and application of forecasts, and participatory approaches for working with farmers. Training includes practicing working with groups of

exercises that include use of analysed historical climate information, introduction to the current seasonal forecast, and participatory planning using resource allocation maps and enterprise budgets. During the season, 5-day forecasts and early warnings of extremes are disseminated rapidly via SMS. Finally, farmers' experiences are reviewed and improvements for the following year are discussed after the end of the season. The presentation concluded that the approach worked well, that farmers found it useful and changed their management in response, and that it offers a pathway for engaging and equipping agricultural extension services and NGOs in scaling up.

Following this presentation, participants separated into four working groups (WG), based on the community that they identify with most closely:

- WG 1: Media and ICT, chaired by Karen Hampson;
- WG 2: Agricultural extension services, chaired by Carla Roncoli;
- WG 3: NGOs and community-based organizations, chaired by Stanley Mutuma;
- WG 4: National meteorological services, chaired by Sawa Makoto.

Working group participants discussed their specific roles and training needs as intermediaries. At the end of the session they then came together in a plenary to present the key issues that were discussed. The need to be sensitive to the different training needs of the different stakeholders was a key issue across working groups. WG 1 highlighted the reach and trust that rural radio has with smallholder farmers, the importance of using local languages for communication via radio and ICT, and the potential to build on existing training programs for broadcasters. WG 2 noted that agricultural extension services need better understanding about climate forecasting, available products, how to interpret them, and the concepts of variability and risk. WG 3 highlighted several contrasts with government agricultural extension services – particularly the complementary, and often multiplicity, of roles that they play; and their different initial level of knowledge – yet favour joint training opportunities with agricultural extension. WG 4 mentioned a gap in understanding the needs of the different stakeholders, and the need to raise awareness of these differing needs. They highlighted their current lack of skills and services to communicate meteorological services to various end-users. The discussion brought out the need for better networking among the

Session 3. Agreeing on Purposes and Pieces

In his presentation, “The Role of Learning in Communicating Climate Information,” Dominic Kniveton addressed issues such as the low uptake of climate information by decision makers, and the need for climate information to be not simply useful, but more importantly, usable. It underlined the need for accurate and credible information and related advisory services in order to build trust, two-way communication, social learning and the co-production of knowledge. He discussed issues such as the high number of information and services users compared to the low number of information and service providers. He proposed the need to move from a culture where information and ‘solutions’ are simply presented to ‘users,’ to one that encourages communities to use the information available to reflect on their own situations and come up with their own solutions in order to build resilience. He also highlighted the importance of addressing issues of uncertainty as a means of assisting farmers to use available information to make better informed, flexible decisions.

Jim Hansen then presented a “straw man” outline of concepts and modules that might structure a training curriculum. Discussion and debate about the proposed topics led to a refined outline. The workshop agenda was adjusted to incorporate sessions on the consensus set of topics. Plenary discussion focused included the importance of farmers and scientists co-producing climate knowledge, the need to validate information (both local and scientific), and the need to understand and communicate uncertainty and risk.

Session 4. Training Implementation Issues

Emma Visman opened this session with a presentation, “An Exchange Between Climate Scientists, Humanitarian and Development Policy Makers, and Communities At Risk,” that considered ways to integrate local and scientific climate knowledge. The presentation surveyed several participatory activities for recognizing, integrating and assessing the reliability of different knowledge sources; and for conveying uncertainty in probabilistic terms. These approaches include: a card game and an Early Warning-Early Action scenario activity, a dart game that illustrates the relationship between lead-time and accuracy, and activities that illustrate the relationship between spatial scale and accuracy.

Steve Twomlow opened group discussion with several issues related to the implementation of training programs for climate services. In response to these issues, working groups were asked to address the following questions:

- What basic concepts do farmers need to understand?
- What additional support do farmers need to be able to act on climate information?
- How do we evaluate the impact?
- How much training is needed to create real change?

The need for ongoing training for communication intermediaries and for farmers was a common concern among the working groups. Participants expressed several views about how frequently training should be repeated, and over what period. WG 1 highlighted the need for ongoing assessment of climate information content and communication channels, and for supporting farmers with guidance and access to new seed and production technologies. WG 2 called for integrating climate services into existing development programs. They also raised concern that fatalism (e.g., climate is under God's control and therefore cannot be anticipated or adapted to) can be a disincentive to using improved climate information to improve farm management. A suggestion that farmers need incentives for ongoing participation led to debate about whether climate services address an existing demand. WG 4 called for coupling climate information with advice on management options, and for evaluating demand for climate services. The discussion highlighted farmers' need to understand basic concepts such as vulnerability, probability and scale; and the need of climate service providers to understand farmers' decisions and the type and timing of information that would support these decisions. Participants noted that evaluation of impacts of climate services is complex and challenging, but that demand is easier to assess.

Session 5. Risk, Variability and Probability

Jim Hansen opened the session with a brief summary of a workshop process for presenting downscaled seasonal forecasts as probability distributions, which has been used in CCAFS pilot projects in Kenya and Senegal. It starts with historic variability: eliciting participants' collective memory of rainfall conditions in past years, then interactively developing a time-

series bar graph of measured seasonal rainfall and validating it against farmers' memory. To help farmers relate past variability to a probability distribution, they sort rainfall data onto a blank graph, with rainfall amount on the horizontal axis and "number of years with at-least this much rain" on the vertical axis. Explanation and discussion is needed to help farmers with the conceptual jump from relative frequency in the past to probability in the future, and interpret the resulting probability-of-exceedance graph. The concept of a seasonal forecast shifting the probability distribution is introduced by highlighting the El Niño (or La Niña) years in a time-series graph, and comparing the probability-of-exceedance curves for El Niño and for all years. Group discussion about the interpretation and management implications reinforces understanding of the new formats and concepts. The approach uses downscaled forecast formats that are not generally provided routinely, but that are feasible using readily available tools.

During this session's breakout, WG 4, representing national meteorological services, looked at how they present the information they produce, and discussed the importance of communicating the probabilistic nature of forecasts and their degree of accuracy. The other working groups discussed the need to incorporate farmer's experiences and observations and proposed comparing these with scientific forecasts. There was a consensus about the importance of communicating probability and uncertainty. Approaches to achieving this include probability games.

Session 6. Using Climate Information for Decision-Making

KPC Rao opened a presentation on "Forecast-Based Agro-Advisories" by looking at farmers' perceptions of climate, and the implications of these perceptions on their management decisions. While farmers generally have a good understanding of climate variability, evidence suggests that their ability to estimate frequency distributions and long-term trends can be biased. Advisories add value to climate forecasts by interpreting their agricultural significance. Forecast-based advisories list potential location-specific management options that farmers can consider, developed through interaction between experts from meteorology, agricultural research and extension. He presented evidence from work in Kenya that improved understanding, on the part of farmers and their support agents, about climate

variability and probabilistic seasonal climate forecasts can contribute to reducing risk, increasing investment and enhancing productivity.

This session's group discussions raised a number of questions including: Who are the decision makers and in what circumstances are these decisions made? What are women's roles as decision makers? In what circumstances are people empowered to act on information? What economic or trust factors influence decision-making? The timeliness of information was highlighted as an important consideration, so that farmers have enough time to use the information to inform their decision-making. It is also essential that the context, relevance, clarity and language of the information are appropriate. A range of participatory games and planning activities are available to help farmers incorporate climate information into decision-making, including: the Early Warning-Early Action Game, daily activity calendars, and participatory scenario modelling.

Sessions 7 and 8. Core Principles, and Foundational Knowledge

These two sessions, the final sessions of day two, looked at core principles for communicating climate information with farmers, and the foundational knowledge that intermediaries require in order to be effective. Proposed principles were ranked in order of importance. These principles were incorporated into the working outline of the training curriculum (Appendix 3), which was discussed and refined further on the final day.

Session 9. Equity Challenges

Chesney McOmber opened this session with a presentation, "Considering Social Equity in the Communication Climate Information Services with a Gender Lens," that explored why equity matters in climate information services. The presentation made the case that social inclusivity should be integrated systematically into climate service endeavours from the start, and across the production, communication and use of information. This starts with understanding equity gaps in participation, within intermediaries, in the content of information shared, and in the process of project or program implementation. Gender is one of several important dimensions of social equity, and arises at household and community levels. Gender analysis provides

levels that are often compounded by gender, and increase equitable participation in the coproduction of climate information. Coproduction of climate knowledge cannot occur without the continuous communication, involvement and participation of marginalized groups and intermediaries. Attention by intermediaries to process, rather than tools, will allow them to develop and apply tools and lenses that are more attune to the needs of marginalized populations.

Lively discussions during the breakout groups dealt with the challenges and tradeoffs involved in efforts to reach those that are most vulnerable to climate. How to identify ‘vulnerable’ groups and individuals was identified as an essential part of intermediary training, alongside training on the different kinds of vulnerabilities, for example, health (physical and mental), wealth status (opportunity), gender and caste. Carla Roncoli noted that there is a tendency to refer to marginalized groups with respect to their vulnerabilities, but there should also be a focus on the opportunities that present themselves by including such groups as contributors of information, knowledge and expertise. A number of existing resources were identified in this regard, such as CARE international’s gender analysis report, the IDS pack on gender and change, and the CCAFS/FAO training guide on Gender and Climate Change Research in Agriculture and Food Security for Rural Development. Rural radio was identified as a means of addressing equity, as most groups and especially women are able to listen to the radio. Existing groups, such as women self-help groups and youth clubs, can be effective and equitable communication channels for climate services. One participant discouraged use of the terms “vulnerable” and “marginalized” due to their negative connotations, and preferred emphasis on “social inclusion.”

Session 10. Participatory Methods

Stanley Mutuma opened the session with a presentation on CARE’s work on “Participatory Scenario Planning (PSP): A Community Based Adaptation Model.” PSP is a process to support rural communities and local governments to interpret seasonal forecasts and plan actions that are consistent with the strength and degree of uncertainty of the forecasts. The goal is to contribute both to climate-resilient rural livelihoods and to local disaster risk reduction efforts. The process respects, reviews and combines local and scientific knowledge.

opportunities and impacts associated with forecast climatic probabilities. Discussion of the implications of these scenarios on livelihoods leads to agreement about plans and contingencies, and agreed responsibilities among local actors. PSP is implemented in four stages: community preparation, a PSP workshop, communication of advisories, and monitoring.

Dominic Kniveton introduced group discussion with a presentation on “Participation,” giving an overview of definitions, origins and a few of the methods of participatory research. The presentation expanded on SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis; and on “triple-loop learning” which goes from actions (“Are we doing things right?”) to assumptions (“Are we doing the right thing?”) to context (“How do we decide what is right?”). Effective participation creates a sense of ownership and empowerment. The presentation and ensuing discussion emphasized flexible, adaptive, pluralistic decision-making, and its implications for climate services. Group discussion highlighted the importance of participatory approaches not only for communicating with farmers, but also for engaging and training intermediaries. Understanding the reasons behind any training will help intermediaries better understand and remember their training. Training should therefore be iterative and not linear.

Session 11. Developing a Core Curriculum

This session was aimed at reaching consensus on the structure of a core curriculum, and capturing participants’ commitments to develop the resulting modules. Group discussion led to a consensus about the following modules or topics (expanded in Appendix 2):

- Principles of climate services for smallholder farmers
- Build two-way communication processes
- Basic concepts of weather and climate information
- Variability and probability
- Seasonal to sub-seasonal climate prediction
- Understanding climate-informed farm decision-making
- Understanding and addressing equity challenges
- Implementation issues

These modules, to be tailored to the differential training needs of the four distinct intermediary stakeholder groups recognized during the expert workshop (media, agricultural extension, NGOs and NHMSs), will constitute the cornerstones of a training guidebook for intermediaries that will be developed as an output from the workshop.

Session 12. Workshop Closing

In the closing session, workshop sponsors discussed actions and timelines for following up on the priority ideas for action that came out of the workshop. Participants agreed on a timeline for completion of workshop outputs, including a jointly authored training resource guide.

Conclusions

The workshop on “Developing a methodology for the communication of climate services at scale through intermediaries for farmer communities in Africa and South Asia” brought together several groups and organizations. It provided an opportunity for groups of experts, who had not previously interacted closely, to share approaches and experiences. The focus went beyond training content and approaches, as participants discussed and debated the broader issues surrounding the implementation of climate services, and implementation of training for communicators. Although the diverse set of participants articulated a diversity of perspectives, they reached a consensus on several important conclusions:

1. There was a clear consensus about the need, value and opportunity to extend their collective approaches and experiences to others through training, as a means of scaling up climate services for smallholder farmers.
2. The set of intermediaries that could play a role in scaling up climate services for farmers is diverse. Training curricula and programs should therefore be adaptable to the needs of particular types of intermediaries. The needs of agricultural extension and development NGOs overlap enough to favour joint training programs where feasible. Media and ICT-based climate communication has rather different training needs that warrant more attention than was given during the workshop.

3. While participants reached a consensus on the scope and structure of training materials, they also concluded that the immediate need is for a compilation of resources that can be adapted to specific contexts and target audiences, rather than a fixed package of training materials.
4. Transparent communication of uncertainty is a challenging but essential component of climate communication. Analysing, graphing and discussing historical variability offers an effective starting point for conveying forecast uncertainty. Independently of forecast information, historic climate analysis can contribute to improved farmer risk management.
5. Science-based climate information and local climate knowledge are complementary. Participatory approaches can facilitate the co-production of knowledge.
6. Providing locally downscaled climate information and locally relevant advisories is essential, but challenging in many countries.

The spirit of the meeting was open and collaborative. Participants committed to share experiences and materials freely, and to jointly develop a training resource publication. As a result, workshop participants identified themselves with a new community of practice to champion communication of climate information services for smallholder farmers at scale.

Appendix 1: Workshop Agenda

Day 1, Wednesday 12 June		
From	To	
8:30	9:00	<i>Workshop Registration, Sign-up for Working Groups</i>
9:00	10:30	Session 1: Workshop opening
9:00	9:15	Welcome Peter Craufurd
9:15	9:35	Workshop Objectives and Context Jim Hansen
9:35	10:05	Icebreaker: Who am I in the chain of climate services? Emma Visman
10:05	10:20	Laying Down the Challenge: Climate Information vs. Service, Dissemination vs. Communication- the role of intermediaries KPC Rao
10:20	10:40	Presentation on White Paper Sumiko May
10:40	11:00	Coffee break
11:00	13:00	Session 2: Clarifying Needs and Roles <i>Chair: Roger Stern</i>
		Developing approaches to support smallholder planning and decision making through use of climate and weather information Roger Stern
		Formation and charge to working groups
		Plenary discussion: Communication roles and training needs
13:00	14:00	Lunch
14:00	15:00	Session 3: Agreeing on Purpose and Pieces <i>Chair: Emma Visman</i>
		Role of Learning in Climate Services Dominic Kniveton
		A “Strawman” Outline of Training Concepts and Modules Jim Hansen
		Working Groups
		Plenary discussion, adjustments to agenda
15:00	15:15	Coffee break, Group photo
15:15	17:00	Session 4: Training Implementation Issues <i>Chair: Steve Twomlow</i>
		Integrating Local and Scientific Knowledge Emma Visman, Dominic Kniveton
		Working Groups
		Plenary discussion
		Day-1 Wrap-up

Day 2, Thursday 13 June		
From	To	
9:00	10:35	Session 5: Risk, Variability and Probability <i>Chair: Jim Hansen</i>
		Presenting Seasonal Forecasts as Probability Distributions Working Groups Plenary discussion
10:35	10:55	Coffee break
10:55	12:30	Session 6: Climate Information for Decision-Making <i>Chair: Dileepkumar Guntunku</i>
		Developing Forecast-Based Farmer Advisories Working Groups Plenary discussion
12:30	13:30	Lunch
13:30	15:05	Session 7: Core Principles <i>Chair: Emma Visman</i>
		Working Groups Plenary discussion
15:05	15:25	Coffee break
15:25	17:00	Session 8: Foundational Knowledge for Intermediaries <i>Chair: Walter Adongo</i>
		Working Groups Plenary discussion Day-2 Wrap-up
19:30	22:00	Workshop Dinner: Nyama Choma Ranch

Day 3, Friday 14 June		
From	To	
9:00	10:35	Session 9: Equity Challenges <i>Chair: Chesney McOmber</i>
		Considering Social Equity in the Communication of Climate Information Services with a Gendered Lens Working Groups Plenary discussion
10:35	10:55	Coffee break
10:55	12:30	Session 10: Participatory Methods <i>Chair: Dominic Kniveton</i>
		Participatory Scenario Planning Working Groups Plenary discussion
12:30	13:30	Lunch
13:30	15:05	Session 11: Developing a Core Curriculum <i>Chair: Jim Hansen</i>
15:05	15:25	Coffee break
15:25	17:00	Session 12: Workshop Closing <i>Chair: Arame Tall</i>
15:25	16:45	Discussion: Where do we go from here?
16:45	17:00	Closing statement

Appendix 2: Workshop Participants

Name	Institution	Country	Email
Mr. Walter Adongo	ICRAF	Kenya	w.adongo@cgiar.org
Ms. Jill Cairns	CIMMYT	Zimbabwe	j.cairns@cgiar.org
Dr. Peter Craufurd	ICRISAT	India	p.craufurd@cgiar.org
Dr. Guntunku Dileepkumar	ICRISAT	India	g.dileepkumar@cgiar.org
Peter Dorwars	Univ. of Reading	UK	p.t.dorward@reading.ac.uk
Mr. Anton Eitzinger	CIAT	Colombia	a.eitzinger@cgiar.org
Dr. Jim Hansen	CCAFS; IRI, Columbia Univ.	USA	jhansen@iri.columbia.edu
Ms. Karen Hampson	Farm Radio International	Tanzania	khampson@farmradio.org
Ms. Mary Kilavi	Kenya Meteorological Department	Kenya	marykilavi@yahoo.com
Mr. Julius Kinywee	Ministry of Agriculture	Kenya	kinyweejulius@gmail.com
Prof. Dominic Kniveton	Sussex Univ.	UK	d.r.kniveton@sussex.ac.uk
Suna Makoto	WMO	Kenya	msuna@wmo.int
Mr. Martin Masai	Mbaitu FM	Kenya	martinmasai@gmail.com
Ms. Sumiko May	CCAFS consultant	UK	sumiko_g@hotmail.com
Ms. Chesney McOmber	Univ. of Florida	USA	cmcomber@ufl.edu
Mr. Jose Miguel del Cid Carranza	Ministry of Agriculture and Livestock	Honduras	josedel7@gmail.com
Dr. Elijah Mukhala	WMO	Kenya	emukhala@wmo.int
Mr. Stanley Mutuma	CARE International	Kenya	mutuma@gar.care.or.ke ; stanom79@gmail.com
Mr. William Ndegwa	Kenya Meteorological Department	Kenya	ndegwa@yahoo.com ; ndegwa@meteo.go.ke
Ms. Fiona Percy	CARE International	Kenya	
Dr. K.P.C. Rao	ICRISAT	Kenya	k.p.rao@cgiar.org
Mr. Onesmus Ruirie	Kenya Meteorological Department	Kenya	ruirie@meteo.go.ke
Dr. Roger Stern	University of Reading	UK	r.d.stern@reading.ac.uk
Dr. Arame Tall	CCAFS; ICRISAT	India	a.tall@cgiar.org
Mr. Dieng Talla	L'URAC (Union of Associative and Community Radio)	Senegal	diengtalla05@yahoo.fr
Dr. Steve Twomlow	IFAD	Kenya	s.twomlow@ifad.org
Mr. Mphethe Tongwane	Lesotho Meteorological Service	Lesotho	mphethe.tongwane@gmail.com
Mss. Emma Visman	Humanitarian Futures Programme, King's College	UK	emma.1.visman@kcl.ac.uk
Dr. Wiebke Foerch	CCAFS; ILRI	Kenya	w.foerch@cgiar.org

Appendix 3: Training Material Draft Outline

1: Principles of climate services for smallholder farmers

Because of the diversity of backgrounds, the outline starts with a module that will bring trainees to a common understanding about some basic principles about climate services for farmers, and about where communication intermediaries fit within climate services. Topics may include:

- Key requirements for farmers to benefit from climate services: credibility, salience, legitimacy, access, equitability, integration.
- Participation, co-learning and co-production of knowledge, and establishing trust.
- Integration of climate services with broader agricultural development.
- Monitoring and evaluation.
- Training as a process.
- What climate services entail beyond the dissemination of climate information.

2: Building two-way communication processes

This module focuses on participatory principles and methods to support two-way communication and co-production of knowledge. Topics include:

- Principles of participatory action research.
- The complementarity of scientific and traditional local knowledge.
- Tailoring services to farmers' needs through participatory monitoring, evaluation and on-going feedback.
- Using participatory approaches to foster ownership and empowerment.

3: Basic concepts of weather and climate information

This module provides a foundation of definitions and essential concepts about weather and climate, the range of information products that may inform farmer decision-making, and the probabilistic nature of climate information. In this and in several other modules, topics can be divided between important concepts for farmers, and additional knowledge to equip the communication intermediary. Content for farmers includes:

- The different time scales of weather and climate, and their relationship to decision-making.
- Farmers' knowledge and scientific knowledge. Basis for seasonal prediction (simplified) and how it relates to farmers' indicators.
- Crop weather relationships
- Uncertainty, risk and decision-making. How uncertainty affects decision-making. How new information affects decision-making.

Additional foundational knowledge includes:

- Drivers of weather, climate variability, climate change.
- The range of climate information products that might be routinely available, and additional products that could feasibly be developed to meet farmer needs.
- Understanding the general and context-specific information needs of farmers.

4: Variability and probability

This module equips trainees to understand and effectively communicate the uncertainty that is inherent in climate information, in probabilistic terms. Content for farmers focuses on understanding past variability, understanding future probability based on past variability, and graphic formats that convey variability and probability. Foundational knowledge for intermediaries includes:

- Rationale for presenting climate information in probabilistic terms.
- Alternative probability formats.
- How to analyse historic weather data.
- Cognitive and communication challenges associated with probabilities.
- Participatory activities that help farmers understand uncertainty and probability.

5: Seasonal to sub-seasonal climate prediction

This module provides a foundation for communicating and interpreting forecast information in probabilistic terms, building on the probability concepts and graphical formats from the previous module. Content for farmers includes the basis for seasonal prediction (in simplified terms), how this relates to their own traditional indicators, and looking at how drivers of seasonal variability (e.g., El Niño/Southern Oscillation) affected the local climate in the past.

and methods for (sub-)seasonal climate prediction, and participatory activities designed to help farmers interpret probabilistic forecasts.

6: Understanding climate-informed farm decision-making

This module is designed to equip intermediaries to help farmers incorporate climate information into their decision processes. Emphasis is on participatory activities that can be used to help groups of farmers understand how probabilistic climate information may influence their decisions. Intermediaries will go through additional concepts to help them understand farmers' decision environment and the role of climate information. These may include:

- Overview of farm decision-making, and factors that influence it.
- How to integrate group learning, farmer innovation and expert advisories.
- Useful decision analysis concepts and methods.

7: Understanding and addressing equity challenges

This module will equip intermediaries to recognize equity challenges within farmer group processes and in climate services more broadly, and provide insights and approaches to overcome those challenges.

8: Implementation issues

The draft curriculum outline concludes with a model dealing with practical issues in implementing both farmer climate communication processes, and training programs for communication intermediaries, in the context of climate services. These issues include:

- Tailoring training programs and content for different types of intermediaries.
- Designing climate communication and training processes with farmer groups.
- Identifying and engaging relevant stakeholders for farmer communication processes
- Developing media and ICT-based climate service delivery.
- Integrating monitoring, evaluation and feedback.
- Institutionalizing climate communication.