

**Cornell International Workshops on Agricultural Education and Information Systems  
Knowledge Systems**

**Cornell University, September 30-October 3, 2007**

The Bill and Melinda Gates Foundation requested a small group to consider the best ways that smallholder farmers and their support institutions might share, develop and gain access to new information about agricultural practices and technology that would improve their lives. In response, a "core team" planned a number of activities, including the workshop reflected in this document, and a companion workshop in Zambia.

**The Objective** of this workshop is to identify near-term and medium-term opportunities for strengthening the **content** of agricultural education/curriculum and information *systems* to meet the needs of smallholder farmers in areas of the developing world. Traditionally called extension, teaching and research, more recently these systems are recognized as complex, interactive activities of knowledge and technology use, generation and exchange among farmers, extension workers, teachers and researchers.

In achieving the workshop objective, discussions will specifically focus on identifying the opportunity to give voice and access to smallholders and their information support systems, using a range of tools, including new social networking tools for agricultural content development and creating a new agricultural education, information and training matrix.

While this workshop focuses on the **content** of agricultural education/curriculum and information systems, a follow-up workshop in Zambia will focus on identifying the most promising mechanisms to improve the **exchange** of agricultural information among smallholder farmers and between smallholder farmers and the people and organizations that support them.

Some overlap between the two workshops is expected and participants in the workshop at Cornell university are encouraged to identify issues that need to be discussed in more detail at the follow-up workshop.

**Processes the workshop will use:**

**Individual Participant Preparation:** Participants are asked to prepare for the workshop by reflecting on and answering the following questions in advance of the workshop.

1. What are the priority issues you see as needing to be addressed?
2. Are you aware of activities already underway that address these priority issues?
3. What is your relevant expertise?
4. Do you have an example of a success story or a failure from which the workshop participants can learn?
5. What do you expect to gain from this workshop?
6. Are there any topics that are not on the agenda that you feel need to be addressed?

**Forepointer Groups:** (Forepointer, one who points out beforehand). Each Forepointer Group will have four members and will incorporate “the wisdom of the workshop” with representatives from each of the breakout sessions.

**Breakout Groups:** Participants will be divided into groups of 10-12 people. They will focus on the topics identified in the program using the questions provided. Each breakout group will have a Facilitator and Reporter. Facilitators will be identified in advance. Each breakout will be guided by the set of questions or a discussion scenario may be substituted for the questions.

**Plenary Discussions:** Following each breakout session there will be opportunities for the entire group to discuss the ideas developed in the small discussion groups.

**Presentations:** Most work will be done in the groups but there will be a number of 15-minute presentations designed to share some key ideas among participants. These will highlight the presenter’s most important ideas and challenge the participants to use them in the breakout groups that form the main part of the workshop.

**Additional Resources:** The core planning team identified a number of areas for which knowledge was particularly uneven and asked various persons to write literature reviews that survey the successes, failures, scalability, incentives, sustainability and replicability of various initiatives for improving the lives of smallholder farmers. The reviews will be posted on the workshop website - <http://www.worldaginfo.org>.

For more information, contact:  
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**Cornell International Workshops on Agricultural Education  
and Information Systems  
Knowledge Systems**

**A Workshop Organized by Cornell University  
on behalf of the Bill and Melinda Gates Foundation  
30 September – 3 October, 2007  
Statler Hotel, Cornell University**

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**SUNDAY, SEPTEMBER 30, 2007**

- 18:00**            **Welcome Reception**
- 18:30**            **Welcoming Remarks**  
*Janet McCue, Director, Mann Library*  
*David Wippman, Cornell University Vice-Provost for International Affairs*
- 18:45**            **Introduction of the WorldAgInfo Design Team and Tasking of Forepointer Groups**  
*Project co-leaders Mary Ochs and Dwight Allen*
- 19:00**            **Dinner and Introductions**

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**MONDAY, OCTOBER 1, 2007**

*Moderator: Janet McCue, Director, Mann Library*

- 8:45-9:00**        **Welcome**  
*David Skorton, President, Cornell University*
- 9:00 – 9:15**        **Administrative Remarks and Explanation of the Workshop Structure**  
*Mary Ochs, Head, Services and Collections, Mann Library*
- 9:15 – 9:30**        **Introductory Remarks**  
*Roy Steiner, Senior Program Officer, Bill and Melinda Gates Foundation*  
Overview of the entire 2-workshop exercise, purpose, objectives and anticipated outcomes.

**Session 1: First Kilometer Challenges and Opportunities**

This session is designed to develop a common understanding of First Kilometer Challenges by sharing experiences and understandings of the variety of ways different smallholder farmers currently develop, obtain, accept, reject, use, modify, ignore, and improve information related to their agricultural activities. (Information transmission to, from and among smallholder producers are the “First Kilometer” challenges).

*Moderator: Thane Terrill, Adjunct Associate Professor of Computing and Education, Teachers College, Columbia University*

- 9:30 – 9:45**        **“Setting the Stage: Why First Kilometer Challenges?”**  
*Dwight Allen, Eminent Scholar of Educational Reform, Old Dominion University*

## PERSPECTIVES FROM SOUTH ASIA

- 9:45 – 10:00** “**Key findings from field visit to India and Sri Lanka**”  
*Karim Maredia, Professor and Program Director, World Technology Access Program (WorldTAP), Michigan State University*
- 10:00 – 10:15** “**Smallholder Challenges and Opportunities in South Asia**”  
*Vanaja Ramprasad, Director, Green Foundation*
- 10:15 – 10:30** **Discussion**
- 10:30 – 11:00** **Morning Break**

## PERSPECTIVES FROM AFRICA

- 11:00 – 11:15** “**Key findings from field visit to Mali and Zambia**”  
*Gracian Chimwaza, Director, ITOCA (Information Training and Outreach Centre for Africa)*
- 11:15 – 11:30** “**A Smallholder View from West Africa,**”  
*Cephas Ametefe, Ghanaian Smallholder Farmer*
- 11:30 – 11:45** “**Smallholder Challenges and Opportunities in Southern Africa**”  
*Henry Kalomba, Regional Manager – North, National Smallholder Farmers’ Association of Malawi*
- 11:45 – 12:00** **Discussion**

## TOPICAL PERSPECTIVES

- 12:00 – 12:15** “**Gender-Based Constraints and Opportunities for Agricultural Information**”  
*Jeannette Gurung, WOCAN (Women Organizing for Change in Agriculture & NRM)*
- 12:15 – 12:30** **Discussion**

### **Session 2: Agricultural Education/Information/Training Content Needs along the Stakeholder Chain**

Smallholder farmers and the range of stakeholders that support these farmers require many types of information, including: market information, farm management information, information on government, private sector, and other services, and information to support education or training. Smallholder farmers and others in Africa and Asia may experience different sets of challenges associated with ensuring the quality, relevance, credibility, and timeliness of information. For instance, much of the information of value to farmers differs across regions and countries, that is, it is local in applicability. In some cases what is good extension advice for one farmer may actually be detrimental advice to another.

Participants are asked to elaborate on the range of agricultural content needs of smallholder farmers and other stakeholders engaged in education, information, and training development and delivery, and to identify the key challenges associated with these information needs.

**Moderators:** *Rex Raimond, Meridian Institute and Robert Herdt, Cornell University*

- 12:30 – 12:45** **Organization of Breakout Groups; Working Buffet Lunch in Groups**

**12:45 – 14:00 Breakout Groups – Elaborate on Agricultural Education, Information, and Training Content Needs Matrix**

Participants in the Breakout Groups will receive a matrix of information types and types of challenges as a starting point for the discussions. Based on their experience and the realities of the issues and challenges they face, participants will be asked to answer the following questions:

- What other types of agricultural information are needed by male and female smallholder farmers and the people that support them?
- What are the top challenges for smallholder farmers or people supporting those farmers associated with information content?

**14:00 – 15:00 Breakout Groups Report to Plenary**

*Facilitators: Rex Raimond, Meridian Institute and Robert Herdt, Cornell University*

**15:00 – 15:30 Afternoon Break**

**Session 3: Defining Challenges and Identifying Possible Solutions**

Participants will receive a revised and expanded matrix based on the outcomes of Session 2. Building on the range of information types and challenges identified, participants will be asked to develop a more detailed understanding of specific challenges and to begin identifying opportunities to address those challenges. The workshop is particularly concerned with reaching women and men smallholder farmers

*Moderator: Robert Herdt, Adjunct International Professor, Cornell University*

**16:00 – 17:00 Breakout Groups – Defining Challenges and Identifying Possible Solutions**

Four groups, each group starting with a different type of information (i.e., market information, farm management information, information on government services, and education or training information), will discuss the following questions. The groups can use the categories listed across the top of the matrix to catalyze their discussions.

- What are the key challenges associated with this type of information?
- For each challenge, is it different depending on the user group (e.g., male farmers, female farmers, youth, extension workers, researchers, educators, policy-makers)?
- Is the challenge different in different regions?
- What is happening already to address these types of challenges?
- Which approaches seem particularly successful, and what can be learned from failures?
- What evidence does past experience provide for new scalable and sustainable solutions?

**17:00 – 18:00 Breakout Groups Report to Plenary**

*Facilitators: Rex Raimond, Meridian Institute and Robert Herdt, Cornell University*

**19:00 Dinner**

**Dinner Remarks “Smallholders’ Access to Information: Policy Issues and Promising Initiatives”**

*Dr. Ousmane Badiane, Senior Research Advisor to NEPAD*

## TUESDAY, OCTOBER 2, 2007

**9:00 – 9:15**     **Announcements**  
*Mary Ochs, Mann Library*

### **Session 4: Knowledge Creation Through Collaborative Processes**

To familiarize participants with cutting-edge developments in information technology to enhance information for smallholder farmers, a few presentations will share ideas about the potential of new technologies to support sharing and creation of content, and report on some important existing international agricultural ICT initiatives of relevance to the workshop.

**Moderator:** *Douglas Allen, Director Global Business Programs, Daniels College of Business, University of Denver*

**9:15 – 9:30**     **“Selected International Agriculture ICT Initiatives”**  
*Barbara Hutchinson, Director, Arid Lands Information Center, University of Arizona*

**9:30 – 9:45**     **“Farmer to Farmer Videos in India”**  
*Rajesh Veeraraghavan, PhD student, Information School, UC Berkeley.*

**9:45 – 10:00**   **“UbuntuNet Alliance for Research and Education Networking”**  
*Margaret Ngwira, College Librarian, University of Malawi, and Secretary, UbuntuNet*

**10:00 – 10:15**   **“Open Curriculum and Textbook Development”**  
*TBD*

**10:15 – 10:45**   **Discussion**

**10:45 – 11:15**   **Morning Break**

### **Session 5: Reform, Revamp, Revitalize Agricultural Extension, information, and Education Systems**

Participants continue the process of identifying new strategies and solutions to facilitate knowledge development and information flows: farmer-to-farmer, researcher-to-farmer, and farmer-to-researcher. Each potential solution should be measured against the following criteria:

- Relevance – Is it likely to meet smallholder needs
- Past successes – Has it been successful under tough conditions?
- Scalability – Does it have the potential to reach 1, 5 or 10 million smallholders?
- Sustainability – Is it likely to continue without massive donor funding?
- Replicability – Can it be replicated to reach 200 million smallholders?

**Moderator:** *Patrick O’Shea, Project Director, HARP Graduate School of Education, Harvard University*

**11:15 – 12:15**   **Breakout Groups – Opportunities to Reform, Revamp, Revitalize Agricultural Extension, Information and Education Systems**

Four breakout groups, each group focusing on a different topic, will explore potential solutions in more detail. Based on information and ideas generated during the workshop thus far, participants will identify strategies and potential solutions to facilitate knowledge development and information flows.

### **New Extension Models to Address the First Kilometer Challenges**

- Which extension models could most successfully address the challenges and implement the ideas identified during Session 3?
- What are some of the alternative mechanisms to integrate smallholder farmers, in particular women, in these models?
- What are mechanisms to better connect smallholders to extension models, ensuring that smallholders' information needs are integrated into the models and feedback on information quality, transfer, relevance, credibility, and timeliness is used to improve the models?
- What are mechanisms to help smallholder farmers assess the credibility and quality of information they access?

### **Agricultural Curriculum, Quality, Accreditation, Credentialing**

- How can smallholder farmer information needs be better integrated in agricultural curricula?
- Can agricultural content be effectively modularized to make dynamic curriculum changes more likely to be incorporated into various levels of university and extension instructional programs?
- What approaches could be used to ensure that modular curricula meet the standards and criteria of credentialing systems?
- How can feedback systems be designed which are simple to use, credible, and accessible to by all users of agricultural curricula?

### **ICT for Agriculture and Implications for Content**

- What are the various means of information and communication tools that smallholders have access to (radio, TV, mobile phones)?
- How necessary is interactive communication?
- How sophisticated are existing tools for localizing information?
- Assuming that the technology exists to automate translate information and extract data, will it be useful?
- What are the costs associated with various technologies?

### **Role of the Private Sector in Agricultural Information, Education**

- Where have public-private partnerships effectively contributed to the AEITS, in your personal experience?
- List the primary ways such activities might be encouraged.
- List the primary barriers to increasing the level of such activities.
- What kinds of incentives might encourage private sector or partnership extension services, to "play fair" and protect smallholder farmers entering the market?

**12:15 – 13:15 Lunch Break**

**13:15 – 14:00 Breakout Groups Report to Plenary**

*Facilitators: Rex Raimond, Meridian Institute and Robert Herdt, Cornell University*

### **Session 6: The Future of Information**

A range of tools exist or are in development that could become part of strategies to change information exchange in the future. In four parallel breakout groups, participants will explore the implications of those tools focusing in particular on the implications for information types and content.

**Moderator:** *Sara Boettiger, Director, Strategic Planning and Development, Public Intellectual Property Resource for Agriculture (PIPRA)*

**14:00 – 14:15 Presentation: The Future of Information**  
*Chris Pal, Assistant Professor, University of Rochester*

**14:15 – 14:30 Discussion**

**14:30 – 15:30 Breakout Groups: The Future of Information**

Four breakout groups, each group focusing on a different topic, will explore how new tools can contribute to solutions. The discussions continue to focus on identifying strategies and potential solutions to facilitate knowledge development and information flows.

#### **Libraries of the Future**

- Given developments in digitization, electronic publishing, information syndication, and integration, what new opportunities are now available for disseminating agricultural information?
- What are the infrastructure needs for libraries to optimize these opportunities, as facilitators of both production and consumption of new information?
- What are the human resource/training needs for libraries in order to realize the full benefit of these new technologies? Are there other barriers?
- Agriculture is local in scope, yet much information has value across geographic boundaries. What are some of the existing and potential roles of agricultural libraries in helping to store, organize and deliver locally-relevant information for the smallholder?
- Is there a need for building a culture of information use and sharing among various groups of users, e.g. researchers and faculty? smallholders? extension workers? If so, are there user training needs, awareness needs, etc.?
- What are the funding challenges libraries face?

#### **Distance Education**

- How do we reach the unreached populations with distance education?
- How do we incorporate interactive elements across language and literacy barriers?
- What are opportunities to incorporate new elements in the teaching and learning process?
- What are preconditions for successful distance education?
- What are new opportunities for feedback?

#### **Language Translations**

- Given that technology for automated translations is in advanced stages of development, what are the new opportunities to utilize this technology?
- What could be done to make these technologies available and deploy them in agricultural information systems in developing countries?

#### **Data Extraction for Localization**

- Given that technology for automated extraction of information is in advanced stages of development, what are the new opportunities to utilize this technology?
- What could be done to make these technologies available and deploy them in agricultural information systems in developing countries?

**15:30 – 15:45 Afternoon Break**

### **Session 7: Developing an Action Plan to Address First Kilometer Challenges**

*Facilitators: Rex Raimond, Meridian Institute and Robert Herdt, Cornell University*

Participants will work together in Forepointer Groups, following Steps 1 – 3 below to identify and rank practical action programs to strengthen the **content** of agricultural education/curriculum and

information systems to meet the needs of small farmers (particularly women) in areas of the developing world.

**15:45 – 17:30 Forepointer Groups Develop Specific Action Items**

Step 1: Develop a detailed list of action programs.

Step 2: Craft a one-sentence description of each.

Step 3: Rank order your list of action programs based on: relevance, scalability, sustainability, replicability.

**19:00 Dinner**

**Dinner Remarks “The Role of the Private Sector in Improving Information for Smallholders”**

*Ranjit Page, CEO, Cargills (Ceylon) Limited, Sri Lanka*

**21:00 Forepointer group discussions continued as necessary**

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**WEDNESDAY, OCTOBER 3, 2007**

**8:30 -- 8:45 Announcements**  
*Mary Ochs. Mann Library*

**8:45 – 10:00 Forepointer Groups Report to the Plenary (participants can add to the list of action items)**  
*Facilitators: Rex Raimond, Meridian Institute and Robert Herdt, Cornell University*

**10:00 – 10:15 Coffee/Tea Break**

**Session 8: Prioritizing Action Items**

**10:15 – 11:15 Breakout Groups Prioritize Action Items**

Taking the action items developed by the forepointer groups, four breakout groups work in parallel to prioritize action items based on the following criteria.

- Relevant – Is it likely to meet smalholder needs
- Past successes – has it been successful under tough conditions?
- Scalability – does it have the potential to reach 1, 5 or 10 million smallholders?
- Sustainability – is it likely to continue without massive donor funding?
- Replicability – can it be replicated to reach 200 million smallholders?

Participants will also be asked to distinguish action items that are critical to implement and which are less critical.

**11:15 – 12:15 Breakout Groups Report to the Plenary**  
*Facilitators: Rex Raimond, Meridian Institute and Robert Herdt, Cornell University*

**12:15 – 12:30 Wrap Up**  
*Project co-leads Mary Ochs and Dwight Allen*