

“Research on Agricultural Extension Systems: What Have We Learned, and Where Do We Go From Here?”

**Workshop organized by the CGIAR Research Program on Policies, Institutions and Markets
October 15-16, 2013, Washington DC, USA**

SUMMARY

This document summarizes the highlights of the discussions. For more information on the presentations, please refer to the workshop PowerPoints, which can be found on the PIM website at <http://www.pim.cgiar.org/2013/07/31/upcoming-workshop-on-agricultural-extension-october-2013/> together with the workshop agenda, the list of participants and a video of the first two sessions.

DAY 1

Session 1 – Introduction and context

In her introductory remarks, *Karen Brooks* (PIM, IFPRI) reminded participants of the purpose of the workshop – clarify what is known about the extension function, and identify directions to take the research agenda on extension forward. She explained how this topic fits in the CGIAR mandate, and pointed out the key role agricultural services play in contributing to the uptake of technologies and innovations by farmers, thus enabling CGIAR’s research to achieve results on the ground. Instead of trying to re-invent the concept of extension, it is important to draw on lessons learned and make these broadly available to the development community. The CGIAR Research Program on Policies, Institutions and Markets (PIM) is willing to lead this effort and to take on board the conclusions of the workshop for developing a shared and coherent research agenda on extension.

Participants then heard a presentation by *Kristin Davis* (Global Forum for Rural Advisory Services/IFPRI) on the historical evolution of extension. Kristin described the decline of extension in the 1980s, followed by a “re-awakening” in the 2000s – linked to the food price crisis and to an increased awareness of global challenges such as climate change. She depicted the new and complex reality of extension as a pluralistic set of activities involving various interlinked players (farmers, government systems, private sector, civil society...) and channels (schools, field visits, Information and Communication Technologies (ICTs) ...), bringing about the need for increased coordination. IFPRI’s “best fit” concept seeks to adapt extension approaches to some key “frame conditions” related to governance/policy, capacity and methods that prevail in a given area.

Participants discussed how extension has evolved from the old “training and visit” model to playing the role of a broker between different actors. They stressed that the farmers’ environment as a whole (level of agricultural development, farm size, markets, cultural issues, etc.) affects extension, and that extension needs to adapt to the changes that have happened to the farmers themselves. The different categories of farmers have different needs for information. Youth often lack avenues for becoming involved in farmer groups and formal extension, and have specific needs vis-à-vis extension. It was agreed that farmer organizations play a critical role in extension, but often lack capacity and need to improve on governance. The history and expertise on extension vary considerably between countries, for instance Central Asian countries like Tajikistan have no history of extension.

Session 2 – Innovative approaches to extension

The session started with a set of seven presentations providing a sample of innovative approaches to extension.

Catherine Ragasa (IFPRI) presented a literature review of frameworks, analytical tools and knowledge gaps in extension. Two main conclusions from this work are that: 1) there are a number of analytical frameworks that can be used to study extension, but the application of these frameworks has been limited so far; 2) most studies which evaluate extension methods focus on the impact of extension on farm productivity; assessments of cost effectiveness and scalability are often missing.

Charles Steinfield (Michigan State University) gave a presentation on the application of ICTs to extension. Mobile services can be grouped into four categories according to their function: advisory and information services; market information; financial information; and decision support. ICTs are often used in combination with traditional media (e.g., farmers watching a TV show about extension on their mobile phones). There are several challenges associated with the use of ICTs, among which: research on effectiveness of mobile services is limited and evidence of impact is mixed; penetration statistics may cover a less favorable reality on the ground; and women have less access to ICTs than men. The role of intermediaries between farmers and ICTs remains essential.

Steven Franzel (World Agroforestry Centre) conveyed to the group findings from studies involving 2,500 volunteer farmer trainers in the East African Dairy Development Program and surveys of organizations using farmer-to-farmer extension in Malawi, Kenya and Cameroon. In Kenya, motivations for farmers to become farmer trainers were most often to gain knowledge and help others. Earning additional income came last in the list of their motivations, whereas earning additional income was the first motivation to remain a farmer trainer after several years. Many organizations found it easier to recruit women farmer trainers than to recruit women professional extension workers, hence farmer trainer programs can be a means of empowering women and improving gender balance in extension provision. However such programs will improve women's access to extension only if they are targeted to women who do not have such access.

In her presentation, *Eija Pehu* (World Bank) insisted on the multiple objectives of extension, from food security, competitiveness, diversification and nutrition to environmental services and climate adaptation and mitigation. She highlighted the critical role of the private sector. The World Bank has several on-going operational and analytical initiatives on agricultural innovation systems that can be drawn from. Another takeaway message from Eija's presentation pertained to the importance of studying the "science of delivery", and the enabling factors for scaling up.

Robynne Anderson (Emerging Ag) provided some insights from private extension initiatives. She stressed several key conditions for extension to be effective: focus on the local needs of farmers (including basic numeracy and literacy training when appropriate); demand driven approaches; coordination between the different actors; and respect for the farmers' knowledge.

Participants were then exposed to a vision of extension as social entrepreneurship, by *Merida Roets* (Scientific Roets). Merida's firm provides a wide range of services to farmers, including project management, training in agriculture, entrepreneurship, and nutrition, but also early childhood development and adult basic education. Merida shared with the group a list of criteria for successful social entrepreneurship in agricultural extension, among which: knowledge of context of client, legal compliance, accreditation and realistic pricing.

The last presentation in Session 2 was by *Valerie Rhoe* (Catholic Relief Services), on Farmbook. Farmbook is a field-based application developed by CRS in order to help farmers plan their farm business and evaluate their productivity and profitability. A set of five skills is being delivered over a period of 3-4 years. Farmbook is being tested by CRS in five countries (Zambia, Zimbabwe, Madagascar, Malawi, and Tanzania), and other partners are also participating in the implementation (e.g., the Kenyan Ministry of Agriculture).

Two discussants were then invited to share reflections based on the presentations.

Silim Nahdy (African Forum for Agricultural Advisory Services) highlighted the complexity of the extension landscape, the diversity of methods and tools, and the lack of clear strategy that often prevails at the national level. He reflected on the impact of privatization of extension, and on the ways that could be used for scaling up. He concluded his intervention by reminding the audience of the political component of extension in Sub-Saharan Africa.

Gershon Feder (IFPRI) noted that researchers are increasingly aware of the pluralistic nature of extension, but that sometimes implementers fail to accept that different client groups have different needs. He picked up on the scalability challenge: approaches may perform well in one environment and less well in a different environment or at a different scale. He confirmed that it would be counterproductive to select one single framework to study extension; the different frameworks are applicable and highlight different aspects of extension.

The main highlights of the group discussion that followed are synthesized below. *Karen Brooks* encouraged participants to step back and discuss the objectives of extension before going into frameworks.

- ❖ The objectives of extension are diverse (e.g., increase food security, improve management of natural resources...). A key objective of extension is to increase farmer income, of which higher productivity is only one component. Extension programs should contribute to conservation of biodiversity.
- ❖ There are a multitude of definitions of extension (e.g., rural advice, rural education, farm support services...).
- ❖ Extension is traditionally focused on crops, whereas animal husbandry is also very important to livelihoods and should also be covered by extension.
- ❖ The information conveyed to farmers can be complementary to other services, such as financial services and input provision.
- ❖ Extension should also provide soft skills (e.g., how to work in groups, how to show respect for elders, how to use local knowledge...)
- ❖ Since it is not possible to reach all smallholders face-to-face, extension needs to provide information that can be disseminated from farmer-to-farmer.
- ❖ The group discussed the case of input dealers providing extension, which can lead to a conflict of interest. Some participants felt very strongly that agricultural extension should be separate from input dealing. Certification/accreditation of extension workers is a way to regulate the quality of extension.
- ❖ Local knowledge needs to be taken into account when training farmers.
- ❖ Interactions between the different sources of extension (e.g., ICTs and field workers) are critical and need to be studied. Extension workers should help farmers navigate between the different sources and interpret messages from various communication channels.
- ❖ There is potential for applying GIS tools to extension.
- ❖ Research on extension needs to include research on the communication component of extension.
- ❖ Given the breadth of the topic, PIM and the group need to focus on the comparative advantage of CGIAR.

Session 3 – Regional view: extension needs and programs

Rezvan Ma'ani (Dalberg) offered a picture of the spending on technical assistance worldwide, resulting from a study conducted by Dalberg. Global spending on technical assistance in 2011 is estimated to be \$8 billion, of which \$7 billion is from national governments and \$1 billion is from donors. Corporates are increasingly large players, with approximately \$270 million worth of spending on technical assistance. In East Asia, South Asia and Latin America, donor contributions make up less than 10% of total expenditure on technical assistance, whereas in Sub-Saharan Africa donors fund an estimated 55% of technical assistance. Government extension programs cover all types of crops, and are mainly targeted to farmers and cooperatives.

Some points that emerged from the discussion following this presentation are listed here:

- ❖ The data presented do not account for disparities within regions, for instance in India between irrigated and non-irrigated areas (irrigated areas benefit from private sector investment, non-irrigated areas do not).
- ❖ The study is based on data from the OECD Development Assistance Committee (DAC) and Creditor Reporting System (CRS) database, which are not always reliable; hence the results should be used with caution.

The following five presentations were devoted to regional extension needs and programs in Sub-Saharan Africa, South Asia, South-East Asia, Central Asia and Latin America.

The presentation by *Silim Nahdy* (African Forum for Agricultural Advisory Services) on Sub-Saharan Africa focused on the new demands on extension: beyond technology transfer to facilitation; beyond training to education; facilitating the formation of farmer groups; dealing with marketing and financial issues; and partnering with a broad range of service providers and other agencies. The main gaps and limits of extension in Sub-Saharan Africa are: weak farmer organizations; lack of capacity; weak public-private partnerships; lack of supportive policies and institutional arrangements; and lack of platforms for lesson learning.

Rasheed Sulaiman (Centre for Research on Innovation and Science Policy) depicted extension in South Asia as dominated by the public sector, mostly top-down and supply driven, and to a great extent decentralized in Pakistan, Nepal and Sri Lanka. Research on extension is disconnected from policy, and there is a lack of collaboration with other actors in the agricultural innovation system. Extension faces four major challenges: financial (including human resources), institutional, conceptual, and learning.

Karen Barroga (Philippines Rice Research Institute) gave an overview of agricultural extension in South-East Asia. In general, agricultural extension systems are pluralistic in the mainland countries, and public sector-led in the maritime countries. Public funding is low, and extension services are free. Extension needs include: broadening the skills of extension workers and professionalization of this career track (including a merit system) to attract candidates; increased use of networking in extension management; and developing a regulatory framework for extension at the national level (only Indonesia and the Philippines have laws supporting extension).

Alisher Tashmatov and Botir Dosov (Central Asia and the Caucasus Association for Agricultural Research Institutions) presented on agricultural extension in Central Asia, which suffers from the following constraints: underdeveloped institutional mechanisms; insufficient financial; institutional and policy support; undeveloped capacity building mechanisms to support extension agents and service delivery organizations; and absence of regulative incentives.

In her presentation about extension in Latin America, *Maria Isabel Paredes* (Latin America Network for Rural Extension Services) stressed among other points: the weak links between extension and research; the insufficient coordination between policy design, institutions and service providers; the low level of decentralization, which hinders the capacity of responding to local needs; and the lack of capacity of farmers to demand services.

A discussion followed, of which key points are reflected below.

- ❖ It would be of value to document and circulate examples of research that was useful in a particular context, explaining how and why it was used, so that lessons can be learned from successful models. The Global Forum for Rural Advisory Services (GFRAS) has been working on a global inventory of good practices, which could be a starting point. Reviews across case studies could provide useful information.
- ❖ The governance and capacity of farmer organizations need to be strengthened so that their voices can be heard more.
- ❖ Extension programs should take advantage of the proficiency of the youth in ICTs. There is potential for extension services to engage with social media such as Facebook, especially to reach out to the youth as part of the effort to make agriculture more attractive to this population. In South Asia Internet is used to network extension workers, promote publications and good practices, etc. (see: www-aesa-gfras.net).
- ❖ Conflicting messages from ICTs may confuse farmers, and it is hard to measure the impact of ICTs.
- ❖ What kind of institutional systems/mechanisms are needed to support implementation of extension? The topic of decentralization cuts across regions.
- ❖ Climate change adaptation is a topic of interest for extension research.
- ❖ What is the right set of skills for tomorrow's "super extensionist"?
- ❖ How can extension help scale up technology uptake?
- ❖ Impact assessment of extension is needed. Can a meta-review be undertaken on this? There is a lack of comprehensive methodology for evaluation of extension.
- ❖ What are the uptake pathways? What form do the messages need to be in to be taken up?
- ❖ Working with local partners is key to determining the research agenda. The "Centre de coopération internationale en recherche agronomique pour le développement" (CIRAD) is in the process of building a research unit in West Africa to support the sub-regional network on extension.
- ❖ Lessons can be drawn at the policy and structural level from the education and public health sectors, which face the same kind of management challenges as extension and have received more attention and funding.
- ❖ We should look at the capacity of whole systems: NGOs; producer organizations; and farmers.
- ❖ Bottom-up approaches (building for instance on national forums) should be used to design research programs.
- ❖ Which guidance can we provide to policymakers with regard to extension programs and reforms? More specifically, can research provide evidence on the optimal budget to be spent on extension, the optimal ratio of extension workers to farmers, etc.?

The group then brainstormed on possible ways of structuring the approach to move forward the agricultural extension research agenda. Given the complexity of the topic and since farmers are a heterogeneous group with variable needs, *Karen Brooks* suggested identifying some themes based on the different groups of functions that extension can address (e.g., natural resource management, commercial needs), and to structure the research according to the knowledge required to meet the needs of these different groups. A survey of informational needs of farmers might help to categorize these needs, before assessing how the supply side can be organized to address them. Other possibilities would be to start from a typology of stages of agricultural development, or cropping systems.

The participants debated whether to follow an opportunistic approach (e.g., what are quick wins in extension research, what existing work can be built on?), or a more strategic and structured approach. It was concluded that PIM needs to be “strategically opportunistic”, i.e. both identify some structured priorities and seize existing opportunities.

DAY 2

Session 4 – Policy research areas

As an introduction to Day 2 of the workshop, *Karen Brooks* reminded participants of the main conclusion from Day 1: there is no “one size fits all” model of extension, and the agricultural landscape is so diverse that a whole range of approaches to extension are required. She emphasized the increased need for the CGIAR Research Programs (CRPs) to demonstrate and communicate results, and provided some information on the new structure of the PIM program, based on seven Flagship Projects (see Annex). She explained that the work on extension would best fit in Flagship Project 3 on “Adoption of technology and sustainable intensification”, and suggested that PIM take steps further in developing a set of tools to operationalize the “best fit approach” and make it relevant to different contexts - especially identifying the different client groups for extension and which extension approaches work best for each of them.

Three presentations followed, each centered on a specific research area.

David Spielman (IFPRI) gave a presentation on metrics. He divided measures into three categories: input indicators (farmer to extension agent ratios, expenditures, frequency of visits...); outcome indicators (participation of farmers, cost effectiveness...); and impact indicators (farmer income, biodiversity conservation...) He insisted on the difficulties to measure certain aspects of extension, such as empowerment, partnerships, and the dynamics of learning.

In his presentation on capacity strengthening, *Suresh Babu* (IFPRI) covered individual, organizational and systems capacity needs. He offered examples of models which work well, for instance, a farmer training center run by a private company and open seven days a week in Tamil Nadu (India), and the role of the NGO Action Aid in teaching farmers to organize themselves in groups to be in a better position to demand services. He suggested focusing the research on capacity development on the capacity of organizations.

Markus Goldstein (World Bank) highlighted gender aspects of extension. According to findings from studies in India, Ethiopia and Ghana, women have lower contact with extension than men, and sometimes get lower returns than men from extension. Early results from impact evaluation of programs in Ethiopia and Malawi show that women seem to benefit as much as men. Both men and women preferred extension workers to be men. Markus suggested that extension might be used to transform women’s role in agriculture.

Two discussants were then invited to share some thoughts based on these presentations.

With regards to metrics, *Suzanne Poland* (USAID) highlighted the need to measure a dimension of coordination and partnerships in order to capture the environment that extension is part of. She also reflected on the aspects of the “training and visit” model that made it effective: use of local actors; knowledge of farming systems; extension modules distributed throughout the season; real time problem solving; and training of extension workers. Suzanne suggested thinking about the skills behind the information needs of farmers, and reminded the group that extension must be flexible to adapt to these changing needs.

Brent Simpson (Modernizing Extension and Advisory Services) acknowledged that measuring behavior change is a challenge. He noted that the reason why “training and visit” extension collapsed is that research ran out of messages for extension workers to deliver; research needs to bring new messages to farmers. Brent concurred with Suresh about focusing on organizational capacities, stressed the need for good linkages between research and extension, as well as the divide between education and extension. Commenting on the presentation on gender and extension, he expressed the opinion that social differentiation in its broader sense (age, cast, class, lineage...) matters as much as gender.

The main highlights of the group discussion that followed are synthesized below.

- ❖ Agricultural courses are not always adapted to the requirements of extension trainers. Specific curricula, including communication modules, should be designed for extension workers.
- ❖ There is a difference between metrics for monitoring and metrics for impact evaluation.
- ❖ There are not enough women candidates for extension jobs.
- ❖ An enabling policy environment is key for extension to be successful; for example the re-greening objective in Niger could not be met until there was a change in policy allowing the farmers to become the owners of the trees on their farms.
- ❖ There is a need for studies on farmer organizations: how they operate; what capacity they lack; etc.

In the second part of Session 4, workshop participants broke into five groups to discuss the following topics:

Group 1 – Capacity (facilitator: *Suresh Babu*)

Group 2 – Delivery models (facilitator: *Merida Roets*)

Group 3 – Institutional arrangements (facilitator: *Kristin Davis*)

Group 4 – Metrics (facilitator: *David Spielman*)

Group 5 – Operationalizing the “best fit approach” (facilitator: *Brent Simpson*)

Each group was asked to answer the following questions: In order to position extension to contribute toward sustainable and equitable intensification of agricultural production and uptake of technology, what are the big research questions to address the designated topic? Who are the likely clients for this research?

Each group had one hour to discuss and 10 minutes to report back.

The reports from each group and reactions from the audience are synthesized below. For more details, please refer to the group presentations attached.

Group 1 – Capacity

This group identified numerous research questions, among which were: How can one identify capacity gaps at the country level? How can one develop a strategy for capacity development? What are the different methods for building capacity? What is the effectiveness of university-based certification? How can extension actors contribute to make agriculture more attractive to youth?

Group 2 – Delivery models

This group suggested conducting a systematic review of the different models of delivery (training and visit, private providers, input provision model, etc.), as well as a review of policy frameworks/legislation. Other research questions identified were: How can we ensure that extension systems are flexible and adaptive? Under what conditions can private sector-financed models address the needs of smallholder farmers?

Group 3 – Institutional arrangements

This group suggested studying country-level reform outcomes after several years (for instance, does decentralization work?), the different arrangements for matching supply and demand, and the institutional arrangements associated with certification and regulation. The group also stressed the importance of building an international community of practice for advisors to learn from one another, as well as platforms which could serve as permanent links to maintain a dynamic environment after the end of specific projects.

Group 4 – Metrics

This group highlighted the need to conduct systematic reviews (including of the grey literature) on the impact of agricultural extension on technology adoption and welfare. Some initiatives already exist for certain models of extension delivery, for instance the International Initiative for Impact Evaluation (3ie) has initiated a review of farmer field schools. The group recommended focusing on impact evaluations at scale (as opposed to pilots), to analyze the impacts on different sub-groups (different categories of farmers, women, youth, etc.), and working not only with governments but also with large NGOs and private sector operators. Regarding monitoring, they noted – among other points – that more work is needed on calculating macro indicators of public investments on extension, that “big picture indicators” (e.g., number of farmers per agent) still need to be recorded, and that measures of quality of service delivery need to be included.

There was consensus around focusing on the area of comparative advantage of CGIAR, i.e., developing Monitoring & Evaluation methods. The challenges associated with measuring behavior change, and separating “the message from the messenger”, were discussed.

Group 5 – Operationalizing the “best fit approach”

The group defined the concept of “operationalizing the best fit” as the process of characterizing the context through identifying bounding conditions (funding, policies...), understanding the attributes of actor groups, and recognizing independent factors, in order for extension to be as relevant, effective, and efficient as possible.

A plenary discussion followed, with the aim of integrating the points raised by the participants to provide guidance to PIM for developing a research agenda on extension.

- ❖ PIM should adopt a synergistic approach, and integrate contributions from other research actors (Modernizing Extension Advisory Services, GFRAS...)
- ❖ PIM should build a database with successful experiences.
- ❖ PIM should contribute to creating a culture of evidence, learning and peer-review.
- ❖ Extension contributes to other PIM Flagship Projects than Flagship 3: for instance Flagship 2 on Incentives for innovation; Flagship 6 on Social protection; and Flagship 7 on Natural resource management.
- ❖ PIM research should include capacity building efforts in order to facilitate better research at decentralized levels.
- ❖ PIM should partner with the World Bank on investments at scale.
- ❖ PIM should take greater advantage of its partnership with GFRAS. The GFRAS country forums can serve as platforms for advocacy.
- ❖ The PIM program should reach out to high level actors, for instance through the General Assembly of the United Nations.
- ❖ The PIM approach will be successful if the PIM “best fit approach” is used in requests for proposals from donors, and by governments.

Closing remarks

K.D. Kokate (Indian Council for Agricultural Research) noted that the meeting contributed to added clarity on agricultural extension research priorities. He shared some insights from the example of the extension system in India and its evolution from the 1970s, and listed some key aspects of research on extension that emerged from the workshop discussions:

- ❖ The new demands of farmers create both challenges and opportunities for extension.
- ❖ Feedback from farmers makes research more relevant, and the preoccupations of smallholders should be at the center of all interventions.
- ❖ Research and extension should be closely linked.
- ❖ Each country needs an extension policy framework.
- ❖ The inclusion of youth needs to be facilitated, using, for instance, incubation centers.
- ❖ Research needs to address how best to ensure farmers' basic education needs, especially literacy.
- ❖ The research agenda should provide space for research on frontier/emerging topics, such as climate change.
- ❖ The "4 Cs" of pluralistic extension are: convergence, coordination, collective action, and capacity development.

Dr. Kokate concluded his intervention by mentioning the need for an increased awareness of the benefits of extension on the part of political leaders.

After praising the good quality of interactions between the workshop participants, *Karen Brooks* pointed out the important role of extension in translating research into results, confirming the need for PIM to invest in this topic. She outlined the role of PIM in systematizing the thinking about extension, increasing the body of evidence on this topic, and issuing a clear message on extension for outside stakeholders. She identified some scoping studies that PIM could conduct in 2014 to clarify some of the ideas that emerged from the workshop, including: a historic overview of reforms of extension systems and frameworks; a study on operationalizing the "best fit approach"; and a contribution on monitoring and evaluation of extension. The Terms of Reference for these pieces will be sent to the workshop participants, and contributions are welcome. PIM's engagement will build on the strengths of the different partners (both implementation and funding partners). In addition to scoping research, PIM will explore action research opportunities, in partnership with the World Bank, and put out a call to the other CRPs to do some impact evaluation of their projects. With regards to advocacy, the development of the Science Agenda for Africa represents an opportunity for PIM to engage with African leaders on extension.

The PIM Management Unit will consult with the PIM Management Committee about these plans and inform workshop participants of the final decisions regarding the PIM extension research agenda. Continued interactions between workshop participants and sharing of ideas and feedback post-workshop are most welcome.