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Evaluating knowledge sharing in research: the International Farmers' Conference organized at ICARDA

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The objective of this paper is to describe the process and the results of the evaluation of the knowledge sharing (KS) during and after an International Farmers' Conference organized at the International Center for Agricultural Research in the Dry Areas (ICARDA) and involving over 50 farmers and researchers from Algeria, Canada, Egypt, Eritrea, France, Iran, Italy, Jordan, and Syria. Storytelling was chosen by the participants, who set the agenda of the topics to be discussed, as the main framework to exchange farmers' knowledge. The evaluation was based on the anecdotal feedback from the participants gathered during the conference, shortly after the conference, and about a year later and on a questionnaire distributed to 64 non-participating farmers to evaluate the diffusion of the knowledge shared at the conference and its effect on farmers' practices. The narratives that were collected in the evaluation were grouped into categories that illustrate several dimensions of impact such as: acquired knowledge and practices, value added for participants, learning and dissemination of knowledge, network sustainability, change in perception of gender roles, impact on research and effectiveness of KS tools approach. The main results from the survey including participants and non-participants were that 57% of participants (respondents) changed their agricultural practices, all respondents told stories about the conference to others; 71% changed their mind about women's knowledge and role in agriculture, and over three quarters stayed in touch with one or more participants. While Storytelling proved an effective means to facilitate knowledge sharing during and after the Conference, documenting local knowledge remains a challenge as important exchanges might occur outside the formal presentations.

Introduction

Why an International Farmers' Conference

Breeding improved varieties of crops is one of the main tools to alleviate poverty in rural areas and increase food security. However, there is little adoption of improved varieties by poor farmers in marginal areas. This is partly due to a gap between the plant attributes that formally trained plant breeders breed for and those preferred by farmers practicing small-scale, low-input agriculture. One way to raise the adoption rates of research outputs such as improved varieties is communicating and exchanging knowledge more effectively between scientists and farmers.

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Participatory Plant Breeding (PPB) addresses this problem by including farmers in the research process and building on their knowledge, preferences and needs (Ceccarelli and Grando 2007). The success of the approach is demonstrated by the rapid development of new cultivars that are being adopted by farmers throughout the developing world. However, the institutionalization of PPB is relatively slow despite its proven efficacy. One of the reasons is the lack of cross-fertilization of ideas among the stakeholders involved in PPB, which along with plant breeders and farmers include social scientists and biodiversity conservationists. This lack of exchange has also prevented each building on the achievements of the others.

The Farmers' Conference that took place in Syria in May 2008 addressed these challenges by providing a space for more than 50 farmers and researchers from Algeria, Canada, Egypt, Eritrea, France, Iran, Italy, Jordan, and Syria, to share their agricultural knowledge. The conference was one of six pilot projects of the Consultative Group for International Agricultural Research (CGIAR) Information and communication technology (ICT) and Knowledge management (KM) programme on Knowledge Sharing in Research.[1] It brought to the attention of the wider scientific community the potential value of farmers' knowledge for agricultural research in general and plant breeding in particular. The conference also built alliances among farmers' communities and between these communities and researchers to bring diverse levels of expertise and knowledge together to create platforms for dialogue and decision-making that ensure viability, ownership and sustainability of agricultural research outputs. Discussing the issues most important to farmers, and eliciting their tacit and gender-differentiated knowledge on crop management were among the conference objectives.

The challenge was to provide an environment conducive for knowledge sharing while using innovative and effective tools to facilitate communication across countries, cultures, genders and experiences. Knowledge sharing (KS) tools and approaches were used to enhance cooperation, facilitate access to and combine multiple sources of knowledge.

After consulting with the participants, storytelling was chosen as the main framework to exchange farmers' knowledge. Storytelling was thought to best facilitate the sharing of knowledge both in terms of format and content because it reflects a format close to the way farmers usually share their knowledge, allowing the use of informal language that suits also the illiterate. At the same time, it allowed discussion of topics that might otherwise be considered too trivial for a conference.

The KS tools selected for the conference included participatory agenda setting, a Food & Seed Fair and network mapping. Both male and female farmers set the conference agenda by deciding what issues to discuss. These included old cultivation methods, mechanisms of coping with drought, the role of women in agriculture and agronomic management. The farmers contributed stories, but also songs and proverbs. Their contributions were documented online,[2] where also videos and transcripts, pictures and other material is featured.

Background to evaluation

The evaluation was to answer two main questions: How can we facilitate knowledge sharing during a conference and what type of social interaction best contributes to individual learning (Blackmore 2007, p. 523). This evaluation is a utilization-focused[3] (Quinn Patton 2008) participatory evaluation that understands the conference as a complex activity system[4] (Williams and Imam 2006) and aims to assess stakeholder learning to evaluate the sustainability of the newly created network, to appraise the effectiveness of KS tools, and to reflect on what worked and what did not in the conference and the reasons for success and for failure (Horton and Mackay 2003).

The evaluation draws mainly on anecdotal feedback from participants gathered during the conference, shortly after the conference and about a year later. It also utilizes the first, mid-term and final project reports where we adopted the Participatory Impact Pathway Analysis (PIPA)[5] approach to evaluate, *ex ante*, the intervention logic and, *ex post facto*, its performance. A simple social network analysis was conducted to illustrate visually the evolution of relationships among participants.

Given the complex learning context of the conference, preference was given to plausible outcomes rather than to proof of changes attributable to the conference (EIARD 2003). The methodology utilized focused on demonstrating contribution through documenting behaviour and practice change, and showed associations between research outputs and impact (EIARD 2003, p. 333).

A group of 64 non-participating farmers was asked to answer a questionnaire aimed to evaluate the diffusion of the knowledge shared at the conference and its effect on farmers' practices. This control group also helped the evaluators identify the plausible outcomes of the conference.

The narratives that were collected in the evaluation were grouped into categories that illustrate several dimensions of impact such as acquired knowledge and practices, value added for participants, learning and dissemination of knowledge, network sustainability, change in perception of gender roles, impact on research and effectiveness of KS tools approach.

The final focus of the evaluation was on the appropriateness of KS tools and methods to best achieve the project goals of knowledge eliciting, sharing, and documenting, and also of network creation among farmers and researchers.

The findings of the evaluation were used to prepare a final evaluation report and were included in a booklet (Galié *et al*. 2009) with the best stories told during the conference.

Findings

A survey administered about one year after the conference gathered feedback from the farmers who participated in the conference (see Figure 1). Thirty-five farmers from five countries responded, of which twelve were female. Their answers were parsed into meaningful categories illustrating four outcomes: Practice change, knowledge spread, network sustainability, and gender awareness. This sample was checked with a control group of 64 non-participants of which about half said they had heard about and were told stories from the conference. For a detailed breakdown of the results see The Appendix and Table 1.

In the following section these results are broken down into more detail, illustrating what practices were changed, how stories were told and to whom, how the network evolved over time and what changes in gender awareness occurred.

Practice change

Of the 35 participating farmers who responded to the survey, 20 changed one or more of their agricultural practices. Nine participants planted a new variety compared with four non-participants. Three participants changed their ploughing depth, lowered the seed rate, or changed the way they store seeds. Two changed their cropping pattern (Figure 2). A detailed breakdown can be found in The Appendix.

Interestingly, in the control group 5 farmers changed ploughing depth and the cropping pattern they use. All of the non-participants who reported changing their work practice also reported having heard of the conference and attributed the change to the stories they had been told. Only 4 farmers planted new varieties, however.

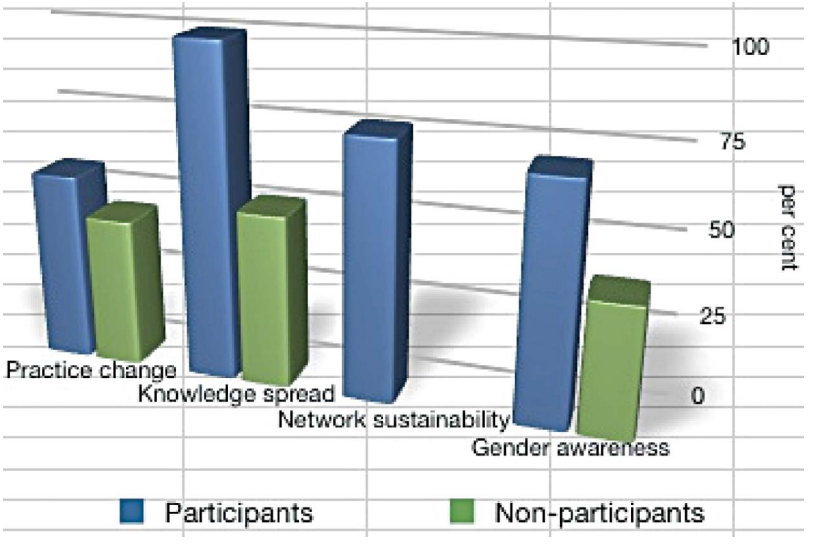

Figure 1. Conference outcomes (in per cent).

Table 1. Main results from the survey including participants and non-participants.

Practice change	
Learning as manifested in changes of practice	57% of participants (respondents) changed their agricultural practices
Knowledge spread	
Learning by spreading knowledge	All respondents told stories about the conference to others
Network sustainability	
Increasing network sustainability by creating direct connections	Over three quarters stayed in touch with one or more participants
Gender awareness	
Learning as increased gender awareness	71% changed their mind about women's knowledge and role in agriculture

As a woman farmer stated during the group interviews:

> *The conference was very useful since we got good information. I learnt about new varieties of barley that I did not know before. By talking and discussing among farmers I learnt about new ways of planting, the right use of fertilizer, how to choose a good seed and good practices for storing seed.* (Ruqeia Ibrahim, Syrian farmer)

In the words of a non-participant:

> *After my wife came back from the Farmers' Conference we tried our best to incorporate what she had learnt but it is not harvesting season yet and I can't give you concrete examples of results*. (Abu Talal, farmer from Lahetha, Syria)

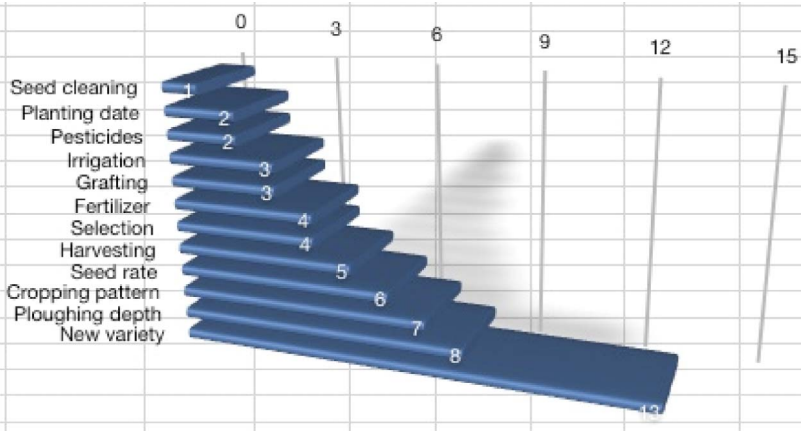

Figure 2. Percentage of farmers who changed their practices.

A farmer from Egypt said about his own learning:

> *I have changed some ideas about seeds through the field trip to Souran. As a result, this season I and my family cleaned the seeds before planting.* (Idriss, farmer from Egypt)

Added value

When asked how the conference was useful to them farmers mainly cited meeting people (19), particularly farmers from other countries, and learning something new (18). Three simply said it was good, two mentioned personal growth, two said they got seeds of a new barley variety and one woman said she can work more independently now (Figure 3). A farmer who did not take part in the event but heard about it mentioned that the Farmers' Conference demonstrated the International Center for Agricultural Research in the Dry Areas's (ICARDA) commitment to working with farmers.

The participating researchers also underscored the importance for farmers to meet others and being exposed to new information. The nine researchers interviewed for this survey listed the following benefits they saw for farmers (in brackets the number of researchers who raised the issue):

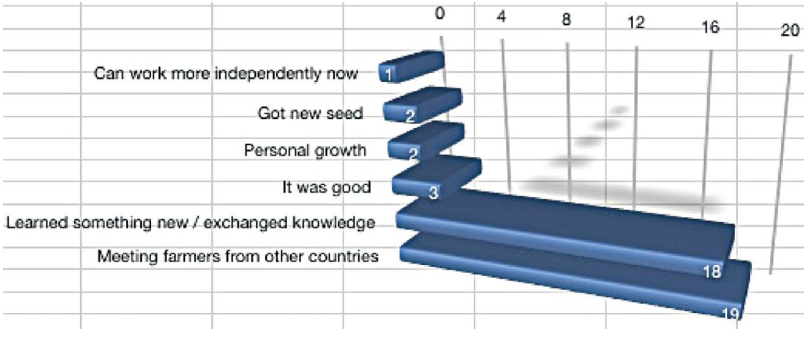

Figure 3. Value added for farmers.

- Exchange ideas and experiences with farmers from different countries (9)
- More information, learned something new, access to new knowledge (e.g. saw new seeds and plants) (4)
- More awareness about project, get to know ICARDA (2)
- Recognition, self-confidence, empowerment (2)
- Revaluing old stories, bringing back lost traditional knowledge (1)

Empowerment as value-added

The empowering effects of the conference for the farmers were testified to by several participants who stated that they gained confidence to speak in public, interact with other farmers and trust their own agricultural knowledge and skills. An Algerian researcher said that the process of story-telling was very comfortable and empowering for the farmers. This was echoed by a visiting Italian researcher who said that through the conference farmers could have a recognition of their innovation capacity and thus a considerable empowerment by the international research community.

> *A highlight of the conference was the feeling that others valued what I had to say, which motivates me to want to work more to improve my farming.* (Ruqeia, Ibrahim, Syrian farmer)

Spreading stories

The conference organizers chose storytelling as the overarching framework for the conference because it was deemed similar to how farmers share knowledge with their peers. All participants retold the stories after the conference to others. Most shared them in their immediate surroundings to farmers in the village, family and friends; some told them to farmers in neighbouring villages in their area; and few told the stories to extension workers, National Agricultural Research Systems (NARS) or farmers unions (Figure 4).

> *I told the stories from the conference to the director of the extension office in Shahba and all extension colleagues. I made an official report during the monthly meeting of all the extension staff and I also told the stories in their own offices. Moreover, I told the stories at the annual meeting of the farmers union in Lahetha* (Sami Jaber, extension worker, Lahetha, Syria)

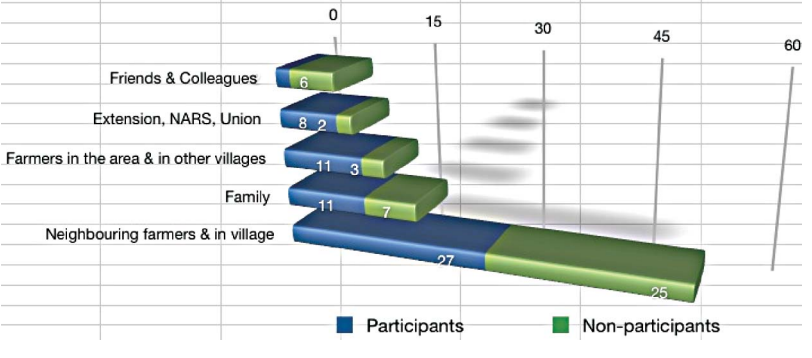

Figure 4. Number of farmers who passed on stories to conference participants or non-participants.

Farmers shared the knowledge almost exclusively by retelling the stories. Very few showed the website to others, either online or using a CD with an offline version the organizers had distributed to some. Remarkably, one Algerian farmer went on air to tell the stories when he was invited by a local radio station (Figure 5).

The lack of available ICT infrastructure for farmers clearly shows here. Nobody distributed the cell-phone videos available on the website, although an earlier access to technology survey found that over half of the participants owned mobile phones that could play videos. On various previous occasions the organizing team saw farmers make use of cell phones to record and share videos, even in a conference setting.

> *I told the stories I heard at the conference to members of the family, other farmers and labourers and also on the local radio CIRTA fm, when I was interviewed about the situation of agriculture this year.* (Mr Aggoune, Algeria)

Network sustainability

The relationships among participants were understood as the communication channels or knowledge pathways that enable blending of knowledge from multiple sources, such as scientists and agricultural communities, and make knowledge more relevant and useful. In the evaluation we monitored the development of the conference participants' network by comparing three stages: before, during and after the conference (see Figures 6–8, respectively).

The evaluation started by reconstructing a baseline of the network before the conference. This is a hubs and spokes model with ICARDA as the central information broker, connected to research institutions and 5 countries through which the farmers are connected (Figure 6). Information flow among farmers in different countries had to go via the central hub – the travelling ICARDA researchers literally acted like medieval 'postillons' bringing news from other countries.

Mapping the emerging relationships between the farmers during the conference was the second stage. Figure 7 illustrates the many new connections made between the participants. A dramatic increase in network properties can be observed, with nodes rising from 11 to 59 and connections from 10 to 210. Overall, network density actually fell from 0.165 to 0.122 because of the large numbers of new nodes added (Table 2).

> *By facilitating farmers to share knowledge among themselves and learn from each other, the conference helped to create farmer-to-farmer extension, which is especially useful in countries where there is limited or even ineffective formal extension services.* (M. Maatougui, Researcher at ICARDA)

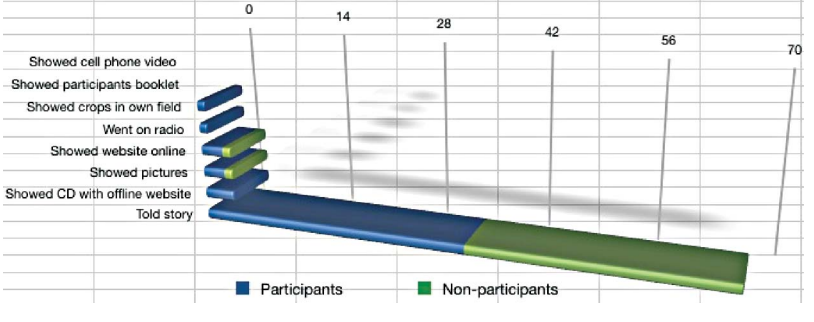

Figure 5. Means by which farmers spread stories.

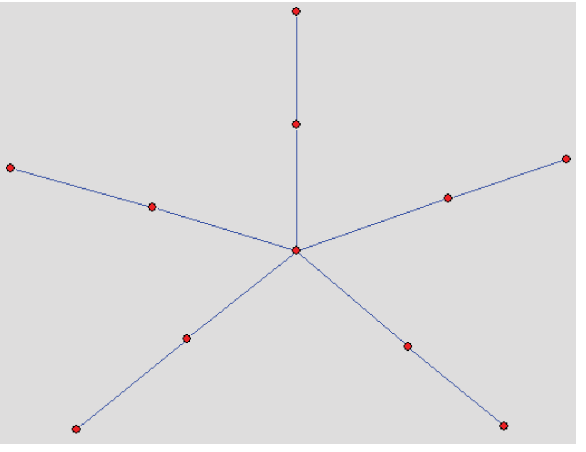

Figure 6. Participant network before the conference.

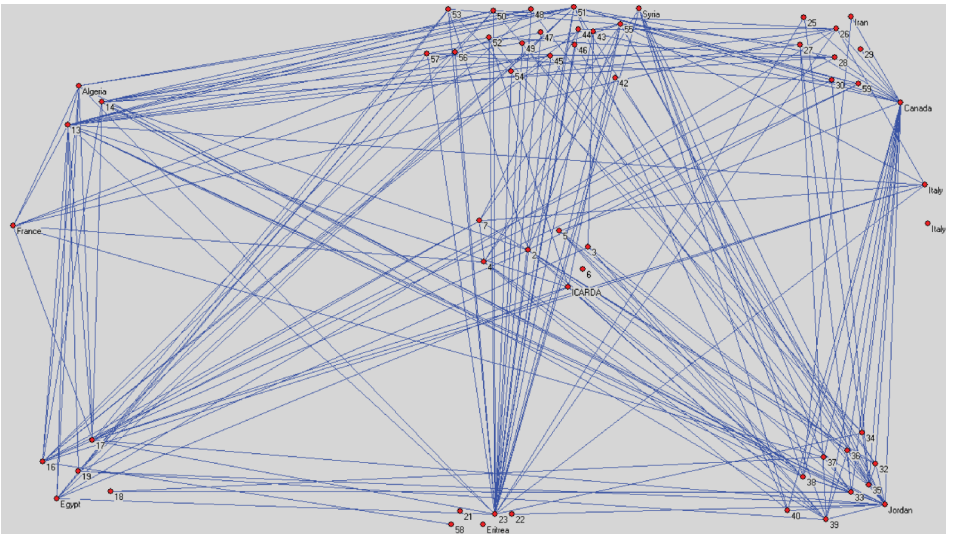

Figure 7. Participant network during the conference.

The conference organizers expected to find a reduced network in the third stage, about one year after the conference. To some extent this expectation was confirmed, the network has less inter-country connections and the role of ICARDA as central hub is re-established. However, and perhaps surprisingly, the overall number of connections in the network has gone up significantly, from 210 to 319 with the number of nodes remaining constant. Participants were taking initiative to make contacts after the conference, particularly within their own and neighbouring communities. This is confirmed by the increased network density of 0.183. Generally the graph in Figure 8 shows that communication across borders occurs when there is no language barrier, as in the case of Syria, Jordan, Algeria and Egypt, which remained well-connected.

Table 2. Network statistics.

	Before	During	After
Nodes	11	59	59
Connections	10	210	319
Density	0.165	0.122	0.183

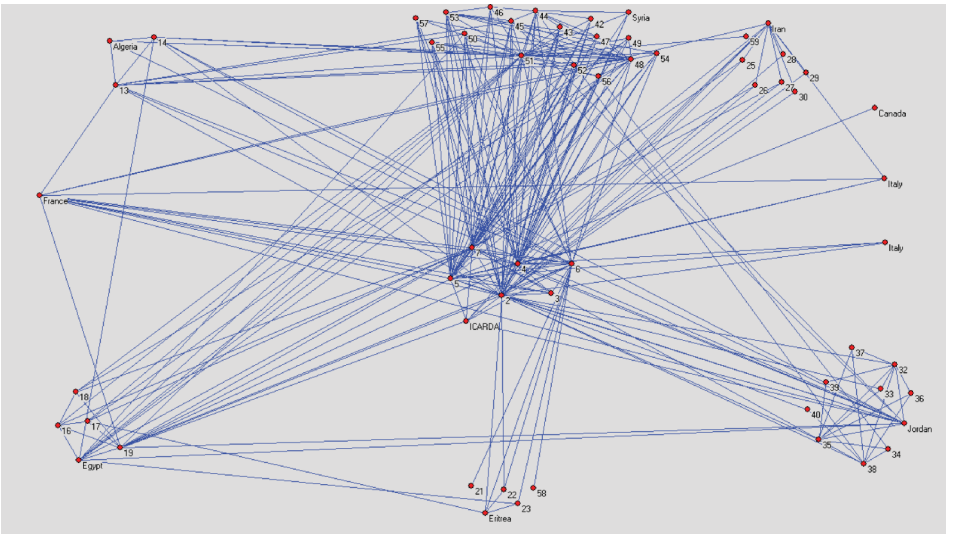

Figure 8. Participant network after the conference.

Staying in touch

By far the most common way for participants to stay in touch was the telephone, the tool of choice for 26 out of 35 survey respondents. Issues talked about range from simple courtesy calls (6) to agricultural work in general (19) to more specific issues such as drought (3) to grafting water melons (2). Obstacles to staying in touch reported were not having contact details (6), the language barrier (2) and the distance (2).

> *I believe there is communication between the farmers. I can't say if it's stable over time but the connections are definitely still alive. The participation of Syrian and Jordanian farmers in a follow-up farmers' conference in France is an outcome of our conference.* (Stefania Grando, Project Leader, ICARDA)

Gender awareness

Through the survey both participating and non-participating farmers were asked if the conference had changed their idea about women's involvement in agriculture. The question addressed the issue of the widespread invisibility of the role of women in small-scale agriculture despite the increasing feminization of agricultural labour in the countries that participated in the conference.

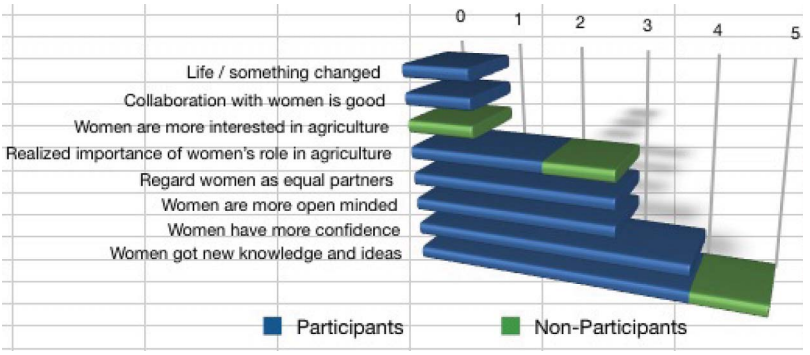

Figure 9. Changes in gender awareness among conference participants and non-participants.

Of those who responded 50% (71% of participants and 39% of non-participants) maintained that they had changed their mind about the role of women in agriculture (Figure 9). Some of them said that they now regard women as equal partners and some said that at the conference they realized the importance of the role women have in agriculture. In the words of one Syrian farmer: *"[n]ow, I think collaborating with women farmers is good; but many people here in the village don't think this way. I did not think this way before the conference either"*.

However, the majority of the farmers who maintained that they had changed their mind about women in agriculture qualified their answers by adding that women had gained new knowledge and ideas after participating in the conference, that they were more open-minded and were generally more interested in agriculture. For the evaluators these answers seemed to indirectly reconfirm the biased perception of women's knowledge and contribution to agriculture rather than indicate a change in role and behaviour.

A group discussion with women farmers in two Syrian villages revealed that their communities and families were surprised about ICARDA's commitment to supporting the participation of these women in the conference and concluded that *"they must be good farmers"*.

Non-participating male farmers declared that they were discussing agricultural work with their wives after they had participated in the conference. After her participation in the conference a young Syrian women farmer, for the first time, was put in charge of deciding what variety to grow in the family field. And this was possible because her family trusted her opinion after she saw the different varieties in the ICARDA fields.

All the researchers who participated at the conference expressed their satisfaction about the participation of both male and female farmers. One emphasized the importance of involving women farmers in the event to discuss gender-specific needs and roles in agriculture and also added how impressed he was by the degree of female participation in the discussion. An Egyptian researcher commented: "[s]ure, our group of farmers and myself were interested in seeing a lot of women participants which could not be expected before the conference was held". One Syrian researcher appreciated the participation of women but expressed his scepticism about women's commitment to move collaboration forward.

Two non-participating researchers from the region stated that neither did they believe that having both women and men at the conference was good, nor had they changed their mind about women's role in agriculture. One of them claimed that women did not get involved in agriculture in the area of Syria where he works.

Participating researchers generally said they did not change their mind about the role women played in agriculture since they had already been aware of their contribution. Two maintained the conference reconfirmed and strengthened this awareness. Stefania Grando, project leader at ICARDA, added that in her previous research work she had many times experienced the complementary roles played by men and women in agriculture and explained:

> *In Eritrea, if you ask men and women what is the best barley to do kitcha [bread], they will both tell you the same varieties. But men are very elusive about their reasons. Women can give you a lot of details, such as water absorption. That means men were aware what to plant because women told them.*

Impact on research

An ICARDA researcher from Algeria said that the Farmers' Conference was a good reminder of the fact that researchers work for farmers, that they develop technologies to improve farmers' lives. The event helped make research more appropriate by giving insight into problems, situations and needs on the ground as well as the innovation and knowledge that farmers may already have and be using.

Value added for researchers

Just under 20% of conference participants were researchers. Most of them had some affinity with participatory research methods. While this makes them qualified commentators, their high estimation of the benefits of the process was to be expected. Researchers listed several forms in which the conference added value to their own work, such as:

- Better understanding context and constraints to adoption:
  Researchers said the conference helped to better understand farmers' expectations and needs as well as the context in which their institutions are working. They learned about limitations to adoption and it helped them to plan research better and understand how to disseminate results.
- Farmers are more effective partners in research:
  Researchers also said farmers know more about research work now, they learned about the importance of new varieties and their dissemination among farmers and they saw seed production on the farm.
- More mutual trust and better cooperation:
  Researchers said the conference confirmed the need to do participatory research and that multicultural as well as multinational research processes are possible. Also, experience was gained for organizing similar events in future. They further cited better cooperation and trust developed between researchers and farmers as added values for their own work.

Dr Ceccarelli, whose brainchild the conference was, explained that a benefit to the PPB research programme was that many of the farmers present at the conference are involved in the ICARDA participatory plant breeding programme. They are all at different stages and so can inform others about what the PPB programme and process is like at the various stages. It provides perspective and may encourage others to participate (Manning 2008a).

Effectiveness of KS tools and approach

Group interviews with women farmers from Syria asked their opinion about the tools used to share knowledge at the conference. Regarding participatory agenda setting, they would have liked someone to visit them and clarify the objectives of the conference during the preparatory phase. About storytelling they all agreed that stories were better than official speeches, because they felt more comfortable speaking informally through stories.

They added that it would have been interesting to have scientists contribute their knowledge through stories too. They suggested complementing stories with photos or visuals, sitting at a table when telling stories rather than going up to speak from the podium, and arranging simultaneous translation because at times it had been confusing to have the stories translated between all the various languages. They also proposed that some questions be directed directly at them, as they may otherwise never put up their hand to ask or answer a question.

They appreciated the field trips where crops and agricultural practices were discussed, and enjoyed the Food Fair where they could look at seeds and products. They appreciated being able to deal directly with scientists and relay their problems, ideas and knowledge and wished they could work together, ask the scientists questions and learn from them to improve their agricultural practice (Manning 2008b).

Story 1: Thyme against Nematodes

During the past four years, the nematode problem appeared in our barley fields, and there's a story I'd like to tell you, when I was a little kid, my grandfather used to put a small wooden box over the old plough, and this box was about 40 × 20 × 20 cm, and he took us there with him to the fields to collect thyme, a plant with a very strong scent, so we collected the thyme and women in the village dried and ground it. My grandfather used to take this powder and put it in the box over the plough, this box had small holes in the bottom, so when he cultivates, this powder mixes with the soil, and although I asked him all the time 'why are you doing this?' he never told us, he just said 'to get rid of bad spirits'. And now during this conference I learned that researchers in Canada are using plants with strong scents to fight nematodes. (Ahmed El-Haj Saleh, Farmer, Syria)

Story 2: Ruqeia - Empowerment

I learnt a lot of new things about planting, using fertilizer, harvesting and good practice for keeping seeds. I planted some of the new seeds I got from the Food and Seed Fair in my home garden and I am curious to see how they will work out. A highlight of the conference was the feeling that others valued what I had to say, which motivates me to want to work more to improve my farming. At the beginning of the conference I was very worried about having to talk in front of strangers, mainly older men, but after hearing words of appreciation for my knowledge I grew more confident and could speak from the microphone. I also found the courage to approach an FAO representative who organizes courses on Integrated Pest Management to find out about possible collaborations. (Rouqeia Ibrahim, Farmer, Syria)

Story 3: A researcher's experience

Organising the Farmers' Conference changed my awareness of knowledge sharing issues. In my whole research on the social impact of Participatory Plant Breeding (PPB) on the women farmers I deal with knowledge sharing issues. I look at 'what knowledge' is usually included in collaborative research and focus on women's knowledge, which is often marginalized because of gender dynamics. I work on finding best ways to discuss women's often tacit and overlooked knowledge. Finally, the nature of my participatory social impact assessment implies a continuous sharing of findings and thoughts with the women farmers. Organising the Farmers' Conference and attending an ICT-KM KS workshop helped me become aware of knowledge sharing issues. As a consequence, I redefined my research methodology and

was more able to refine the methods and tools. During the organization of the conference I also had the chance to research KS and gender issues in particular and developed some gender-sensitive methods and tools for including women farmers in the event. This was a radical change in my research approach that will influence all my future work, which, I believe, will develop KS concepts and methods further, particularly in relation to gender issues. (Alessandra Galiè, Research Fellow, ICARDA)

Conclusions

This final section interprets the above results and relates them to the original aim of the paper: Evaluating KS in research. Each outcome of the project is assessed and in turn feeds into an overall conclusion judging the effectiveness of the chosen KS approach.

Practice change

The project's impact on working practices of the participating farmers seems unusually high, and compares favourably with the usual rates of adoption reported throughout CGIAR. However, significant behaviour changes like modifying seed rates or ploughing depth are of course not the result of one single conference. Rather, they constitute one point in a long process of change to which the conference has contributed building on many years of previous work and debate.

A possible interpretation of the results could be that trust plays a central role in the process of adoption. The assumption of the conference organizers had been that farmers are more likely to take advice from other farmers than from scientists and researchers. The findings would support this assumption.

Spreading stories

The original idea of spreading knowledge in the form of short cell phone videos did not work. While farmers do use cell phone videos themselves none of them downloaded the videos from the website. With hindsight, this may not be surprising as only a quarter of participants had Internet access, and only 18% had a broadband connection. A different distribution strategy should have been employed.

During the interviews farmers repeatedly asked ICARDA staff to provide computers and Internet connections to facilitate collaboration with researchers and other farmers.

Overall, storytelling proved a very effective method for farmers to share knowledge with their peers. All surveyed participants retold stories they had heard at the conference, mainly within their immediate environments. Additionally all non-participants who heard about the conference retold the stories to their peers. This is a strong testimony to the fact that farmers will share knowledge effectively if it is presented to them in an accessible format.

Network sustainability

The fact that the network kept growing on its own instead of becoming impoverished after the conference is an illustration of the desire of farmers to directly exchange information. This is particularly so, because cross-country communication faces challenges such as language barriers, missing contact information and lack of ICT infrastructures, all impacting negatively on the overall network density. In sum, the conference goal of creating a more sustainable network with more direct connections between farmers was reached.

Added value

The main value added for farmers lay in the opportunity to meeting with other farmers from other countries and with researchers. Second in importance was access to new information. Time and again anecdotal evidence refers to the empowering effects the conference had, particularly for women farmers.

Gender awareness

The conference aim of increasing the awareness about the role women play in agriculture was achieved. A large majority (71%) of the participants said either that they changed their mind about the role of women in agriculture or that they, already aware of this role, had their convictions reconfirmed. Generally the change in awareness among non-participating farmers was lower (39%). The degree and depth of this awareness and its actual impact on research might need further testing and research.

Impact on research

Anecdotal evidence points to an improvement of the research process – on the one hand, better relationships with the farmers lead to more/mutual trust. On the other hand, improved mutual recognition of the knowledge each side brings to the table leads to more efficient and targeted research priority setting. Both effects have the potential to improve adoption rates.

Overall effectiveness of the KS tool and approach

The International Farmers' Conference successfully elicited and documented tacit knowledge by giving farmers the opportunity to share their experience in the form of stories. It demonstrated the importance of this knowledge to the research process by illustrating types of value added for researchers. The conference also enriched the network of farmers and researchers and, thus, made it more sustainable. By ensuring the participation of women farmers, the event has contributed to both, the elicitation and documentation of women's knowledge, and positive changes in gendered perception of women's role in agriculture.

> *The conference has been a big event in the farmers' life. They always ask: 'When will be the next one?'.* (Salvatore Ceccarelli, Participatory Research Specialist at ICARDA)

Documenting local knowledge, however, remains a challenge. Important exchanges might occur outside the formal presentations, for example during coffee breaks. It would also be important to lower the risk of loosing knowledge in translation. A follow-up event should be a regional conference where participants share a common language. That would also make it easier to establish and maintain links among participants.

Storytelling proved an effective means to facilitate knowledge sharing during and after the Conference. Farmers' individual learning was aided by the informality of the process and a mix of social interactions that included farmer-to-farmer exchange, field visits and the Seed and Food Fair.

Notes

1. The Knowledge Sharing in Research (KSinR) Project aims to help improve the effectiveness and impact of CGIAR research through providing options and lessons around good practices to support enhanced collaboration, learning, and delivery of research results.
2. http://www.icarda.org/farmersconference/.
3. A utilization focused evaluative framework interprets relationships among multiple variables, values and system dynamics, integrates qualitative and quantitative data, and watches out for emergent phenomena.
4. By refusing to simplistically break down complexity to analyse its component parts in isolation, system concept evaluations value the dynamic relationship between the components and appreciate the importance of multiple understandings and of challenging boundary judgments of any situation (**Williams and Imam** 2006, p. 7)
5. Developed by Borou Douthwait for CGIAR.

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Appendix

Table 3. Survey results.

			Q0	Q1	Q3	Q4	Q5	Q6
	Number	Women	Heard about conference*	Changed practice	Told stories	Is still in contact with other participant(s)	Changed mind about women in agriculture	Was told stories from the conference*
Participants	35	12		20	35	27	25	
Non-participants	64	7	37	29	33		25	35
Total	99	19	37	49	68	27	50	35

*Question for non-participants only.

Table 4. Q1.1 Changes of practice.

No.	Practice	Participants	Non-participants	Overall
1	Changed planting date	1	1	2
2	Changed soil preparation	1		1
4	Grafted water melons	3		3
5	Used thyme against nematodes	4		4
6	Used fertilizer	1	3	4
7	Used irrigation	2	1	3
8	Lowered seed rate	3	3	6
9	Changed seed storage	3	1	4
10	Planted new variety	9	4	13
11	Changed ploughing depth	3	5	8
12	Changed cropping pattern	2	5	7
14	Cleaned seeds before planting	1		1
15	Selects varieties differently	1	3	4
16	Used pesticides		2	2
17	Changed harvesting method		5	5
18	Follows 'modern' techniques		8	8

Removed '3 Quality of seed' (1/0) and added to '15 Selects varieties differently' (0/3).
Removed '13 Garlic to preserve seed' (1/0) and added to '9 Changed seed storage' (2/1).

Table 5. Q2 Types of value identified by the farmers.

No.	Value	Participants
1	Meeting farmers from other countries	19
2	Learned something new/exchanged knowledge	18
3	Personal growth	2
4	Can now work more independently	1 (female)
5	It was good	3
6	Got new seeds	2

Table 6. Q3.1 Who stories were told to.

No.	Who	Participants	Non-participants	Overall
0	Everybody	6	0	6
1	In village/neighbouring farmers	27	25	52
2	In other villages/farmers in the area	11	3	14
3	Extension workers	4	1	5
4	Researchers (NARS)	1	1	2
5	Farmers Union	3	0	3
6	Family	11	7	18
7	Friends	2	5	7
8	Colleagues	0	1	1

Table 7. Q3.2 How stories were spread (answered by 35 participants and 32 non-participants).

No.	How	Participants	Non-participants	Overall
1	Told story	35	32	6 < 7
2	Showed cell phone video	–	–	–
3	Showed website online	3	1	4
4	Showed pictures	3	1	4
5	Showed participants booklet	–	–	–
6	Showed crops in own field	1	–	1
7	Showed CD with offline website	4	–	4
8	Went on radio	1	–	1

Table 8. Q4.1 How they stayed in touch (answered by 27).

No.	How	Participants
1	Meeting F2F	3
2	Phone call	26
3	SMS	–
4	MMS	–
5	Email	–
6	Chat	–

Table 9. Q4.2 What they talked about (answered by 24).

No.	What	Participants
1	Courtesy call	6
2	Agricultural work	19
3	Drought	3
4	Grafting water melons	2
5	Participatory Plant Breeding	2
6	The conference	4
7	Seed exchange	2

Table 10. Q4.3 Challenges to staying in touch (answered by10).

No.	Obstacle	Participants
1	Distance	2
2	Language	2
3	Has no contact details	6
4	Has no phone	1
5	Has no email	1
6	It is too expensive	1

Table 11. Q5.1 How they changed their mind about women in agriculture.

No.	Change of mind	Participants	Non-participants
1	Life/something changed	1	
2	Women got new knowledge and ideas	4	1
3	Women are more open	3	
4	Women have more confidence	4	
5	Regard women as equal partners	3	
6	Women are more interested in agriculture		1
7	Realized importance of women's role in agriculture	2	1
8	Collaboration with women is good	1	