

Using the tools in the toolkit: building research capacity with knowledge sharing methods from the CGIAR, FAO and KM4Dev

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Abstract

Building Ecosystem Services Research Capacity in Semi-Arid Africa (BESSA) is a project targeted at helping African environmental analysts, researchers and key stakeholders to develop skills for undertaking environmental and socio-economic assessments for potential Payments for Environmental Services schemes. A major BESSA activity in 2009 was a face-to-face training workshop involving international experts and African researchers over a two-week period. The workshop was a unique opportunity to apply and explore innovative methods for knowledge sharing, as promoted by the Consultative Group for International Agricultural Research Information and Communication Technologies – Knowledge Management programme (CGIAR ICT-KM), the FAO and the KM4Dev community, via the Knowledge Sharing (KS) Toolkit (www.kstoolkit.org). Methods included ice-breakers, speed-geeking, peer assists, network mapping, and after action reviews, as well as role-playing games and hands-on fieldwork. These methods were coupled with more traditional lectures based on how suitable the content was to each technique. By complementing the formal classroom lectures with sessions that took a radically different approach to learning, participants and trainers became actively and enthusiastically engaged in the learning process. Techniques such as peer assists and social network mapping allowed participants to generate new knowledge and understanding about the social and political contexts for their work in order to improve linking research and knowledge to action. Using feedback from the participants and trainers, taken during and at the end of the workshop, we highlight some key lessons learned about how best to use these techniques, and their suitability and adaptability to different learning contexts.

Introduction

When scientists from the Macaulay Land Use Research Institute (Aberdeen, Scotland) and World Agroforestry Centre (Nairobi, Kenya) joined forces to implement a capacity-building project for African scientists working on environmental services, they were faced with several challenges. How do you help develop and communicate scientific knowledge to facilitate implementation of environmental services projects? And how do you do this in less than two weeks with over 60 participants from 6 African countries, and ten trainers/experts from across Europe, North America and Asia? The learning process would be multi-directional; scientists and applied researchers would have to work together to share experiences, environmental assessment tools and plenty of knowledge. The workshop would need to be designed using the right mix of knowledge sharing tools and methods, in order to achieve the project's objectives.

The Knowledge Sharing (KS) toolkit (www.kstoolkit.org) is developed and promoted by the Consultative Group for International Agricultural Research Information and Communication Technologies – Knowledge Management programme (CGIAR ICT-KM), the FAO, and the KM4Dev Community. This toolkit, developed primarily for use in an international development context, is made up of tools that originate from different disciplines and sectors including sociology and management. Use of these tools has been slowly increasing throughout the agricultural development and

environmental management sectors, thanks largely to active dissemination and trainings by the above-mentioned contributors. The environmental services programme at the World Agroforestry Centre had not actively employed these tools in its work; the capacity-building workshops therefore offered an excellent opportunity to apply and test these tools to review their effectiveness for training and knowledge sharing.

This paper aims to assess how well some of these techniques were received by participants; which methods allowed active and enthusiastic engagement and interaction; and which methods allowed generation of new knowledge and understanding. It also summarizes some key lessons about how to best use these techniques and their suitability and adaptability to different learning contexts.

Workshop background

The workshop was part of the project Building Ecosystem Services Research Capacity in Semi-Arid Africa (BESSA), and was targeted at helping African environmental analysts, researchers and key stakeholders to develop skills for undertaking environmental and socio-economic assessments for potential Payments for Environmental Services (PES) schemes. The main objectives of the workshop were to strengthen informal networks, exchange experiences, reiterate and communicate scientific knowledge, provide support for applied researchers with their case studies, and to raise awareness of the issues related to PES. The project built on the existing World Agroforestry Centre project Pro-poor Rewards for Environmental Services in Africa (PRESA), a network of PES case studies and practitioners working as a community of practice since 2008. The workshop included 64 participants and 10 trainers, from Kenya, Uganda, Tanzania, Malawi, South Africa, Indonesia, Guinea, USA and Europe. Participants and trainers had diverse backgrounds and interests, and possessed a range of existing knowledge and experience. Most of the trainers were scientists first and trainer second, meaning there was a range of practical experiences related to facilitating knowledge exchange in large groups.

In order to cater to the wide variety of topics, experts and participants, the workshop was designed to include various methods, including traditional classroom lectures; hands-on training on field techniques; role-playing games; and sessions to encourage participants to share knowledge with each other. The workshop not only presented a good opportunity to apply some of the methods from the KS toolkit but also became an opportunity to better understand which tools can help facilitate learning.

Methods used in the workshop

KS methods

A variety of methods from the KS Toolkit were selected for their ability to facilitate good knowledge sharing, and adapted for the workshop. We will discuss four methods in particular: the tagging icebreaker, speed geeking, peer assists, social network analysis. Additionally, two evaluation methods were used, spider diagrams and after-action review. These methods are chosen for discussion due to availability of feedback from participants, success of implementation/deployment, and general interesting observations about their usefulness as a KS tool. Table 1 below gives an overview of these methods, showing main purpose as recommended by the KS Toolkit and how the method was used for the BESSA workshop. Most of the tools were not used 'out of the box' but rather adapted to suit the workshop's purposes.

Table 1: Overview of methods used and objectives

Method	Main Purpose as described in KS toolkit	Use in workshop and specific goals
Tagging	To get to know each other; to	Getting to know you, identifying topics and learning needs,

Icebreaker	become more comfortable with discussing the topic of groupwork; setting the tone of the workshop	starting to think about the issues. Each person writes on a nametag three topics that they'd like the workshop to address. Participants move around and speak to each other and begin to find people with similar interests. They move into groups of people with the strongest connections and begin to discuss the main issue in common. Each group is given 15 minutes to discuss the different aspects of that topic they would like to learn about, how they connect with other issues, and some key questions for the workshop. The outputs can be used to adjust the workshop programme to meet participant needs.
Speed Geeking	Quickly expose participants to a new information about any topic: programs, theory, technology, etc.	Expose the participants to the five case studies being undertaken as part of the PRESA project, as told by practitioners working at these sites. This can help generate discussion about the issues that are common across sites, and topics for future work and research in the sites.
Peer Assists	Brings together a group of peers to elicit feedback on a problem, project, or activity, and draw lessons from the participants' knowledge and experience.	Let participants dive deep into specific real world challenges related to implementing Payments for Ecosystem Services. Four workshop participants were invited to share a specific problem they face in their project with peers (as well as some experts assigned to each group), in order to elicit suggestions for ways forward.
Social Network analysis	"the mapping and measuring of relationships and flows between people, groups, organizations, computers or other information/knowledge processing entities" (Krebs 2000)	A modified network mapping exercise to help participants and researchers gain a better understanding of the actors/organizations that can bridge knowledge with action in PES context, (aka 'boundary organizations'). The objective of this session was to help clarify <i>who</i> the boundary organizations are, the <i>relationships</i> between them, and <i>how</i> knowledge and power flow. Participants work in groups according to the site where they were working. They identify key stakeholders and actors in their network, highlighting the relationships and knowledge flows between these partners, and also identify how powerful each actor is (a rough adaptation of the 'towers of influence' described within the Net-Map network analysis method (see http://netmap.ifpriblog.org/). The results of this exercise fed into a session where participants provided concrete suggestions for more effective boundary work at sites in Africa (under the PRESA project).
Spider Diagrams	"Quick and dirty" evaluation technique, to visualize how participants evaluate a workshop/the achievement of project objectives.	Used throughout the workshop to get feedback from participants about how useful a session was, and used by the workshop organizers to adjust and improve the subsequent sessions.
After Action Review	A simple evaluative process, a form of group reflection; participants review what was intended, what actually happened and why, and what was learned.	Done twice during the workshop, in a slightly informal and unstructured way, to assess effectiveness of different facilitation methods.

Evaluation techniques

We believe that evaluation is the key to successful capacity building exercises. In order to meet participants' learning needs, it must first be discovered what they are, and then feedback should be used to assess whether these needs are being fulfilled. The idea was to use evaluation for a dynamic and responsive workshop. Before the workshop, participants were surveyed on their interests (what they wanted to learn) and areas where they were already knowledgeable (to assess potential resource people). The workshop also benefited from ongoing quick evaluations, to help the organizers adjust the program

to meet participant needs. Finally, participants had the opportunity to evaluate the workshop in detail on the last day.

Pre-workshop

A simple survey was included with the workshop registration form, to assess the issues and topics that participants were most interested in. This gave the workshop organizers an opportunity to ensure that the sessions would cover these desired topics, such as valuation of environmental services, mechanism design, and policy engagement. See Fig. 1a for a weighted visualization of the interests. A second question asked participants about their areas of expertise, which revealed a large number of people working on the socio-economic aspects of environmental management, as well as people working on ecologic impact assessment. See Fig. 1b for a weighted visualization of the expertise. This was useful for the workshop organizers in order to plan how participants might act as resource people during the workshop.

During the workshop

On day 1, participants were guided through a “tagging” ice-breaker (see Table 1 for detailed description), to allow them to get to know each other and begin to talk about issues. In order to get the discussion going, we showed a “wordle” of all the issues that had come up in the pre-workshop survey (Fig. 1c). The tagging exercise generated excellent discussion on specific topics and allowed participants to further elaborate the different dimensions each issue that they were interested in learning more about.



Figure 1a. “interested-in-learning”



Figure 1b. “expertise”



Figure 1c. “all topics”

Fig. 1. “Wordles” developed before and during the workshop to keep track of participants’ interests and expertise

Two other evaluation techniques were used during the workshop, to help the organizers adjust the programme and quickly assess how things were going. Spider-diagrams were used to get “quick and dirty” feedback after some of the early sessions. After-action reviews were used as well, to quickly assess the effectiveness of some of the KS methods, including speed geeking and peer assists. The

results of these evaluations, and assessment of the techniques themselves, are discussed in the ‘results’ section of this paper. In addition to these structured evaluation methods, workshop organizers fed their own observations into daily meetings to discuss what was working and what needed improvement.

End of workshop

We conducted a detailed end of workshop evaluation to assess how well the key topics were covered; whether participatory sessions helped generate knowledge; the quality of facilitation methods; as well as more general feedback. Rather than administering a 14 page survey to each individual, we displayed the survey on chart paper and asked people to provide feedback, ‘dot-mocracy’-style. This method, which required participants to move around the room, kept the energy going and allowed continued interaction and debate. Although peoples’ responses to the survey questions may have been influenced by their peers, it still generated clear and useful feedback about the workshop’s strengths and weaknesses. The discussion below focuses specifically on participants’ feedback on the different facilitation methods.

Results

The workshop, as a testing ground for different KS methods, generated a number of lessons relating to the usefulness and effectiveness of the methods. The following results, detailed in Table 2, are based on the evaluations and observations during the workshop, and participant feedback from the final evaluation.

Table 2: Findings based on evaluation and observations during workshop and feedback from the final evaluation

Participant enthusiasm	Degree of interaction	Generate knowledge & understanding
<i>High</i> – people were energized and shared knowledge with several people. “Excellent method of facilitating further interaction”.	<i>High</i> – people quickly met and shared knowledge with several people. “Excellent method of facilitating further interaction”.	<i>Moderate</i> – discussion was mostly superficial, though participants began to think about interconnections between topics/issues
<i>High</i> – participants did not “bored”, though “marathon” format made presenters tired	<i>High</i> – lots of information shared and presenters gained insights from participant questions	<i>Moderate</i> – time limits prevented deep discussion. This was partly remedied by having a plenary discussion on common issues, and recommendations for next <small>steps at each site</small>
<i>Moderate</i> – some peers felt unhelpful, as they were so new to the subject; others said the session stimulated thinking and discussion	<i>High</i> – Lots of peer questions helped assistee the issues; the peers appreciated learning from real world examples	<i>High</i> – facilitated cross-site learning; good basis for further discussion in plenary (though time for this was limited)
<i>High</i> – despite initial confusion, participants were very keen to share knowledge and jointly build the network. Many people in small groups already knew each other which eased interaction networks.	<i>High</i> – exercised participants working closely in small groups, exchanging knowledge about their social interaction networks.	<i>High</i> – “gave concrete ideas” for improving action within the different networks analysed
<i>Moderate</i> – a lot of encouragement required. Method only used for 2 days	<i>Low</i> – individual responses, though but possibly influenced by peer responses	<i>Low</i> – did not ultimately give much new insight
<i>Moderate</i> – participants preferred more time for topical discussion than for evaluating facilitation methods	<i>Moderate</i> – participants openly gave feedback and discussed merits and problems	<i>Moderate</i> – feedback generated some useful insight about how to better implement the evaluated KS methods

Method	Specific goals	How well were goals achieved?
Tagging Icebreaker	Getting to know you, identifying topics and learning needs, starting to think about the key issues	<i>High</i> – participants immediately learned about each other and began discussing the key issues for the workshop. Set the interactive tone for rest of workshop
Speed Geeking	Expose the participants to five PES case studies associated with PRESA project; generate discussion about the issues that are common across sites, and topics for future work and <i>research in the sites</i>	<i>High</i> – participants learned about a variety of real world projects, setting the basis for further discussions in the course of the workshop
Peer Assists	Let participants dive deep into specific real world challenges related to implementing Payments for Ecosystem Services, and help develop strategies for moving ahead	<i>Moderate</i> – a few participants pointed out that some of the ‘problems’ were not well-selected, which impeded discussion in some groups
Social Network analysis	Map actors, knowledge flow and relationships in a PES network to clarify how knowledge can more effectively be mobilized into action	<i>High</i> – participants and facilitators jointly produced recommendations on “Key activities and guiding principles for linking science and policy” which became the basis of a policy-brief (Catacutan <i>et al.</i> 2009)
Spider Diagrams	Quick feedback on how useful session was, and for organizers to adjust and improve the subsequent sessions	<i>Low</i> – rough nature meant it was difficult to distinguish useful responses, which reduced efforts to track and incorporate feedback
After Action Review	Done twice during the workshop to assess effectiveness of different facilitation methods	<i>Moderate</i> – feedback was structured and useful

Discussion

Overall, the workshop participants were enthusiastic about engaging in new knowledge sharing techniques. The tagging icebreaker certainly helped set the tone for an interactive and dynamic workshop. This was sustained by regularly mixing new KS methods with traditional lecture-style sessions, throughout the workshop. Some participants commented that they were as excited about what new method would be used next, as much as about the substance of the sessions. This mix of methods allowed us to sustain energy levels throughout the two-week workshop, a difficult feat. Some of the feedback received to describe the workshop overall includes “beyond expectation”, “rejuvenating” and “enriching”, which gives testament to the participants’ enthusiasm.

Enthusiasm and interaction peaked during the icebreaker and speed geeking sessions, which both had in common some running around and plenty of opportunities to ask questions and share opinions. Other sessions, such as the social network analysis and peer assists, required more facilitation and encouragement before participants opened up. On one hand it was necessary to clarify the objectives and potential benefits of engagement; on the other hand it was important to work with the key participants and facilitators (ie. peers in the peer assist) in advance, to ensure the session would run smoothly and meet its objectives.

Interestingly, the methods which generated the least enthusiasm were the spider diagram and after action review techniques, both used for evaluation. Both techniques suffered from a clear lack of purpose in the participants’ eyes. One participant bluntly expressed that the after action review used to assess the effectiveness of facilitation methods was taking away valuable time from further discussion of the workshop’s themes. Facilitators had to constantly encourage participants to contribute to the spider diagram, and the results were not as useful as we had hoped. As such, this technique was dropped after

two days. The comprehensive evaluation conducted on the last day proved more effective in encouraging participant feedback, and generated more useful results to assess the successes and drawbacks of the workshop.

Techniques such as peer assists and social network mapping allowed participants to generate new knowledge and understanding about the social and political contexts for their work in order to improve linking research and knowledge to action. Both techniques required significant preparation and the outcome largely depended on the way the questions and problems were designed. The key was for participants to understand that each person's contribution was necessary in order to have a useful result, and that the outcomes would be somehow useful to them as well.

The Peer Assist session generated some useful lessons for both the peers and the assistees. The assistees received a number of concrete suggestions for moving ahead in their project implementation; the peers were exposed to concrete examples which allowed them to draw lessons for their own work. Some of the participants pointed out that the problems chosen were not sufficiently realistic, or that the project was not far enough along in its implementation to have concrete challenges. This was partly a result of having a limited number of mature projects to draw from, as well as lack of time to comprehensively screen each peer.

The social network mapping exercise was complex, but benefited from very concrete goals. Allowing participants to visually map out a largely qualitative set of variables helped them to clarify some key dimensions that influence the success of their projects. The follow up discussion helped to structure this knowledge into a set of key recommendations for effectively bridging knowledge to action within the PRESA network. Although the concepts were sometimes abstract, participants remained on track because they were speaking about their own work and the on-the-ground contexts that they know best. Moreover, participants were able to take the maps away with them for further reflection and to potentially use as a tool in their work. Below, we summarize for each KS method key lessons about the best use of these techniques in similar workshops, and their suitability and adaptability to different learning contexts.

Tagging icebreaker

- This method is very flexible and can be adapted to fit many different objectives. We chose to link it to the workshop's themes in order to get the discussion going
- It helped to have keywords on display to inspire participants, although discussion would have continued without it.
- Several facilitators are required to keep things under control, help 'lost' participants and ensure that discussion is moving in the right direction

Speed Geeking

- Prepare the presenters beforehand so they will have a realistic idea about how the session will go – they need to know that time is not on their side!
- Although most effective when telling a small amount of information, it can be used to share more detailed stories, such as case studies
- There may be tradeoffs in terms of less detail and presenter exhaustion, but participants are much more awake and engaged than if listening to four 30-minute presentations/lectures
- Presenters will generally adapt their story after the first telling, based on the questions they received. Usually this helps to streamline and clarify the details.

Peer assist

- choose the problems carefully; if possible, walk the peer through the problem to see if it is concrete enough to be discussed in the session
- find someone to help facilitate the session and practice in advance with the peer and the facilitator

- carefully explain the objectives and desired outcomes of the session and let participants know that they have much to contribute, and much to benefit
- try to place a few experts from diverse backgrounds in with the peers, to help the discussion along. We were able to do this thanks to the pre-workshop survey, to ensure that each group had a good range of expertise.

Social network analysis

- There are a multitude of techniques for social network mapping and analysis. Familiarize yourself with some of them, and adapt what is necessary for your purposes. We combined exercises to map knowledge flows with exercises to assess each actors' degree of influence.
- Find a way to make the results useful. Although there are various methodologies for quantifying different variables in a social network, our objective was to help draw out broad principles for effective mobilization of knowledge, and ultimately published a policy brief containing these recommendations

Spider Diagram

- This method is probably best used in conjunction with other, more concrete, evaluation techniques.
- The criteria for evaluation needs to be well-chosen and clearly explained to the participants
- Facilitators need to continuously remind participants to add their feedback; they also need to look at the results to assess its usefulness.

After Action Review

- Although useful as a tool to assess the effectiveness of different KS methods, it would have been better if adapted to assess other issues or aspects of the training, with a stronger focus on content
- The tool works best when all participants have been involved in whatever is being assessed, a limitation when working with a large group coming from diverse projects.

Conclusions

What can we learn from this exercise for future capacity-building work?

Our participants, who came from several African countries, with different educational backgrounds but many common interests, were very open to new techniques and were remarkably comfortable with a high level of interaction. This gives us hope that the KS methods discussed here, as well as others, are applicable to diverse capacity-building exercises. It would be interesting to see how a similar training would play out with primarily European or North American participants.

One of the key reasons for success was extensive pre-planning and practice with colleagues who would eventually be facilitators. This helped to reveal weaknesses in the methods, and allowed us to find ways to modify the techniques to better suit the workshop's objectives. Achieving buy-in from facilitators can ensure a more effective workshop, particularly when dealing with such a large and mixed group of participants. A key component of planning is designing the questions. The quality of the questions or problems guiding discussion can make or break a session. The more constrained the objectives, the better focused a session can be.

Usefulness of the KS toolkit

The KS toolkit is an excellent resource for people looking to design workshops that facilitate interaction and exchange, while sustaining enthusiasm and enhancing knowledge generation. The toolkit does well to include information about which tools and methods fit with different contexts. By giving concrete examples about how the tools have already been used in different agricultural information settings encourages uptake and experimentation. The KS toolkit is even more useful if a user has experienced these methods firsthand, for example at other workshops. It is difficult to get a sense of how the method feels by reading about it. Additionally, many of these methods are easily adaptable, and their variations could also be shared and discussed as part of the toolkit. As the wiki expands to include further concrete

examples and recommendations, and as use of these methods spreads through the CGIAR and partner institutions, uptake and willingness to try these methods in new settings may increase.

Knowledge sharing is inherently a learning process, and the workshop itself was an opportunity not only for the organizers to learn about best practice for capacity building, but also a chance for the participants to be exposed to new KS tools which they can potentially use in their future work.

References

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