

**From Bright Spots to Bright Coverage:
Role of knowledge sharing in enabling innovation systems through improved research,
learning, outscaling and upscaling**

A case of knowledge sharing and innovation in Central Asia

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Abstract

Overexploitation of water and soil resources is occurring within the Central Asia region resulting in serious economic, social and environmental consequences. Declining agronomic productivity associated with salinization and elevated water tables have consequently contributed to the development of endemic poverty in rural agrarian based communities in the region. Whilst the region faces enormous challenges in preventing, mitigating and reversing the processes of soil and water resources degradation, there is cause for optimism. There are individuals, small communities and households that have adopted innovative practices and strategies to reverse resources degradation in a sustainable manner whilst maintaining or enhancing food security and income generation in the region. These so-called 'Bright Spots' are areas where land degradation and low productivity have been successfully reversed through soil remediation technologies and best practices. These practices combined with innovative coping strategies to enhance cash flow, have resulted in higher crop yields, increased profitability, and improvement in resource conditions on farm.

The International Water Management Institute (IWMI) is leading an ADB funded project entitled "Enabling farming communities in the Aral Sea basin to reverse water and land degradation by the creation of 'Bright Spots'". This project promotes and supports community based innovations whilst increasing profits at farm level. In addition, the Knowledge Sharing in Research Pilot Project of IWMI and the Challenge Program on Water and Food (CPWF) is also working closely with the 'Bright Spots' project to introduce and integrate knowledge sharing approaches into the research process. The aim is to improve the effectiveness of the research towards greater uptake of research results, outscaling of best practices both 'home-grown' and externally induced, and to support these innovations towards wider positive impact. An institutionalising of a knowledge sharing culture and use of specific and appropriate knowledge sharing approaches and tools, are targeted at supporting the aims of the overall project focused on enabling innovations.

Currently a strategy for use and integration of knowledge sharing has been developed and adopted for the project, and a number of approaches already tested within the innovation framework. The project continues to use knowledge sharing approaches for better identification of 'Bright spots', improvement of the mutual learning process between farmers and researchers, and facilitation of better ways of sharing vital knowledge and experiences towards an outscaling of practices aimed at reversing land degradation. The project has been testing a range of Knowledge sharing approaches within its various activities. The potential of implementation of targeted knowledge sharing approaches and activities is that it can support improved learning, understanding and uptake of the final output of the Bright Spots Project. While this work is ongoing, some key lessons have already been learned about the role of knowledge sharing in supporting innovation on the ground both by researchers and farming communities.

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Introduction

As the societies of Central Asia transition from their Soviet era, a number of... many of which have affected agricultural production, especially devastating for the local people trying to carve out a livelihood based on agriculture. In the midst of this, a number of farmers developed innovative ways to combat the salinity problems facing them. These innovations, however, have not attained wide coverage, rather existing in isolated pockets within the region. Additionally, research generated knowledge on ways to combat productivity problems within the region's conditions, have also worked in isolation of local farming communities, lacked an infusion of local understanding and actions, and failed in transferring valuable knowledge to those who need it. The situation was characterized by two main areas of innovation being developed but achieving little impact on the ground.

This paper proposes that the adoption of a knowledge sharing philosophy and use of a wide range of knowledge sharing approaches can be a mechanism to support agricultural innovation systems. A brief look at the theory behind this proposition will be followed by a more lengthy presentation of a case study of knowledge sharing adopted in an innovation project in Central Asia, through which some key examples, success and challenges may be highlighted. The project being presented is..

The KS approaches that will be discussed in this paper are not necessarily formalized approaches or recognised approaches used in the way in the exact way in which they were designed. Rather these approaches have been adapted to local and regional conditions and to suit the goals.

Innovation systems

Innovation is typically understood as the “*introduction of something new and useful, for example introducing new methods, techniques, or practices or new or altered products and services*”³. Further defined it can denote “*the process of making improvements by introducing something new*” (Wikipedia) and can even suggest a “*change that creates a new dimension of performance* [Peter Drucker](#) (Hesselbein, 2002)” (Wikipedia).

There may two main types of innovation processes. One is the ‘home-grown’ innovations which occur on the ground, initiated, developed and implemented by farmers or others in the local setting. These are important innovations which make use of contextual and indigenous knowledge, are defined by present conditions, match farmers’ capacity and resources, and help them in some way to achieve an improved situation. Many of these local innovations are, for the reasons cited above, valuable to agricultural development. Some of thee innovation however, may not fully capitalize on. However, these remain as isolated examples, with little spread even amongst other farmers in close proximity. The other type of innovation may be described as externally induced. This is where research, development, technology or ?? processes generate knowledge which may be translated into new practices or products which benefit people, especially the resource-poor rural people.

Knowledge sharing

Knowledge, while a term widely used, is often hard to define. While not clearly understood, it is something that is heavily sought after. Knowledge is basically what we know, but is most often associated with what can be tangibly found in books, other forms of print media, on the internet, and in other formats in which it has been codified. This type of knowledge is known as ‘explicit knowledge’. However, there is also a large body of knowledge that has not been codified, that exists within the minds, experiences and histories of people around the world. This ‘tacit knowledge’ includes non-documented indigenous knowledge as well as valuable insights, understanding, experiences, practices, ideas and concepts of people. There has been a greater focus on explicit

³ <http://en.wikipedia.org/wiki/Innovation>

knowledge both in terms of generating it as well as sharing it, however tacit knowledge has been left undiscovered and unlocked.

Knowledge sharing includes but is not limited to more well known concepts of communication and dissemination which imply a one way process of delivery of information, usually codified, from one party to another. Knowledge sharing rather, involves the interaction between people in ways in which they can achieve a two-way and mutual learning system, allowing them also to tap into the vital tacit knowledge that exists. Knowledge sharing should be seen as an iterative and ongoing process, not something that happens at a final stage of some process. Knowledge sharing can and should happen on multiple levels and between various groups. Knowledge sharing is not prescriptive and cannot be narrowly defined into a couple of blueprint processes. To implement knowledge sharing, a wide range of approaches may be adopted to facilitate the attainment of this goal. The choice and use of approaches must be made considering the goal, the conditions, the actors, the knowledge systems, as well as the appropriateness of any particular approach.

Knowledge sharing in innovation systems

Innovation systems often suffer from inadequacies of other systems in which it interfaces with. An example of this is the failings of research to capitalize on opportunities to enrich, strengthen and make useful the information they generate. Research has suffered in terms of identification of innovation, undertaking a wider learning process, and achieving a spread of vital knowledge both horizontally and vertically. There are three main things to consider in why these inadequacies occur. Firstly, very often research projects undertake their work, intentionally or unintentionally, by-passing local actors and systems, while trying to maintain a rigid scientific research methodology and standard. This type of research does little to involve stakeholders in their research process and misses out on vital information and opportunities for information flow. This has quite often resulted in obliviousness to innovative practices or systems in the study area, with traditional approaches being unable to unlock additional treasures due to a blindly focused attention on the perceived gold. Furthermore this rigid approach lacks the capacity to gain valuable local or indigenous knowledge, which can enrich research. A third point is that traditionally research has been narrowly focused on documentation and dissemination of research results via limited channels such as peer-reviewed journals, books and other documents. The vital knowledge generated by research projects which either could help with development of innovation or even documenting innovation on the ground remains inaccessible to multiple levels and categories of stakeholders due to impediments ranging from language, finances, physical access, and even usability of information in this format.

Knowledge sharing encourages more interaction and involvement of stakeholders associated with the research topic, realizing the vital nature of their role. The knowledge sharing philosophy asks researchers to consider more than formal publication and to seek and enable partners or to undertake activities and approaches themselves which will provide outreach for, disseminate or outscale/upscale research findings and knowledge.

Knowledge sharing can positively contribute to innovation systems through improving the generation of knowledge, including blending of formal and indigenous knowledge, facilitating a wider movement and use of the knowledge (outsourcing) and targeting relevant channels for knowledge to become institutionalized so that real support may be gained for positive actions on the ground (upscaling). Knowledge sharing can then act as an enabling mechanism within innovation systems through four main avenues-identification, learning, outsourcing and upscaling. Firstly, looking at identification, knowledge sharing can enable the identification of innovation (bright spots in this case) through enhancing research processes to interact with stakeholders and understand local situations better. Secondly knowledge sharing approaches can enhance the process of mutual learning in which knowledge is gained from the local 'Homegrown' innovations as well as sharing knowledge from externally designed innovations. A third role of knowledge sharing in innovation is in outsourcing of innovation. Through adopting key approaches to bringing people together, knowledge sharing amongst a key group may better equip and motivate them to spread what they have learned or know with others, thus achieving a wider geographical spread of innovation knowledge and practices. The final way in which knowledge sharing can

enable innovations as being discussed here is in facilitating upscaling. Upscaling, as a way of institutionalizing knowledge and practices through moving it up into relevant levels where support may be gained, is vital to gaining support for innovation and enabling its development as well as spread. Knowledge sharing approaches may also provide a mechanism for transferring knowledge to relevant groups in a meaningful way.

Additionally, the use of a range of knowledge sharing approaches aimed at improving sharing of knowledge on an institutional level within research projects, institutes and amongst partners can also enable innovation through improved processes that research, interact with and support them.

Background

“Formerly irrigated lands have been degraded heavily for the past decades resulting in high levels of salinity and elevated water tables in major agricultural regions of Uzbekistan. The considerable deterioration in productivity has made farming impossible, leading to extreme difficulties in earning a living for farming communities. In my area, which is Mirzachul rayon of Syrdarya region, where salinity is very high, farming practices didn’t yield any profit and therefore farmers had to abandon their lands. In the area where I live, Galaba farm, the abandoned area made up as much as 1800 ha. If this will not be dealt with, in 10-20 years time, the whole farm area will have to be abandoned. Though there are government structures and centers whose functions are to address issues like that, little or nothing was done to practically combat the land degradation due to lack of national budgets and appropriately skilled staff or extension services.”(Avezov Tursunboy, Leader of the Farmers Learning Alliance, Galaba farm)⁴

IWMI is leading an ADB funded project entitled “Enabling farming communities in the Aral Sea basin to reverse water and land degradation by the creation of ‘Bright Spots’”. Overexploitation of water and soil resources in the region with concomitant desertification of the Aral Sea and damage to the delta systems, has resulted in serious economic, social and environmental consequences. Declining agronomic productivity associated with salinization and elevated water tables have contributed to the development of endemic poverty in rural agrarian based communities in the region. Whilst the region faces enormous challenges in preventing, mitigating and reversing the processes of soil and water resources degradation, there is cause for optimism. There are individuals, small communities and households that have adopted innovative practices and strategies to reverse resources degradation in a sustainable manner whilst maintaining or enhancing food security and income generation in the region. The Bright Spots are areas where land degradation and low productivity have been successfully reversed through soil remediation technologies and best practices. For example, individual farmers have developed coping strategies that include simple changes in farming practices such as ensuring timely agricultural operations, using organic soil amendments, maintaining water infrastructure on farm, and use of waste lands for crop diversification. These practices combined with innovative coping strategies to enhance cash flow, have resulted in higher crop yields, increased profitability, and improvement in resource condition on farm. The overall objective of the project is to address poverty, improve food security at household level and enhance environmental security through the development, promotion and adoption of strategies that enhance the productivity of existing irrigated farming systems in Central Asia. The Bright Spots project works in three countries in Central Asia; Kazakhstan, Turkmenistan and Uzbekistan. The project partners include the International Water Management Institute (IWMI), International Center of Agricultural Research in Dry Areas (ICARDA) and International Center for Biosaline Agriculture (ICBA). The national partners of the project are research institutions of Kazakhstan, Turkmenistan and Uzbekistan.

Knowledge Sharing in Bright Spots

⁴ Quotation taken from nomination document prepared by Avezov Tursunboy and IWMI for the CSO marketplace at the CGIAR AGM 2006.

IWMI and the CGIAR CPWF⁵ are currently piloting a project on Knowledge Sharing in Research, to demonstrate the value of Knowledge Sharing in research approaches through hands on experiences. It includes ten projects that are implementing pilot activities with the aim of drawing recommendations, lessons learnt and guidelines on how to better incorporate knowledge sharing into research projects. As one of the ten piloting projects within the Knowledge Sharing in Research Pilot Project (KSRPP), an integrated knowledge sharing component was proposed and developed to best match the conditions and needs of the project. The Bright Spots research project aims to develop and adopt innovative technologies that enhance productivity and income generation opportunities for disadvantaged rural farmers through the effective management of problematic saline soils and water and to effect changes in current resource and agricultural management policies. The Bright Spots proposed knowledge sharing activities were designed to be complementary to the overall project objectives and work plan. The plan and implementation also have remained flexible and iterative to adjust to prevailing conditions and to suit project needs and goals. The specific objective is to implement knowledge sharing activities within the Bright Spots Project that will support the research process and the uptake of the final output, especially among project team members, partners and local communities. The Knowledge Sharing in Research Pilot project has been supporting the project in using knowledge sharing approaches and creating a knowledge sharing culture both institutionally and within the research process, to support the projects following objectives:

- (i) Identifying and promoting the expansion of community based innovations termed 'Bright' spots that prevent further land and water degradation and enhance the livelihoods of agrarian communities in the target countries.
- (ii) Evaluating plant species and management systems that have the potential to increase productivity and income generation on saline soils through farmer participatory trials in the three target countries.
- (iii) Enhancing the capacity of national research and extension services to develop and promote innovative strategies that address land water resource degradation.

The proposed inclusion of knowledge sharing within this research project focuses on the design and implementation of targeted knowledge sharing approaches and activities that will support the improved learning, understanding and uptake of the final output of the Bright Spots Project. As there are many partners and countries involved, a strategic approach towards better knowledge sharing was seen to complement the successful implementation of the project. Knowledge Sharing has also been used as an important component to support the research process through ensuring better planning, communication, implementation and finally uptake of research results. These activities are aimed at increasing knowledge sharing with end users and stakeholders throughout the cycle of the research process. These approaches are intended to increase participation, facilitate open exchange, initiate two-way communication, sharing and learning and enhance impact.

The change in institutional, as well as research culture is especially challenging in the Post-Soviet environment of Central Asia. The introduction of participatory approaches, aimed at integrating multiple stakeholders, especially supporting researcher-user interaction into the process of research requires a major shift in attitude and behaviour; however in this setting even small gains promise large benefits.

Knowledge Sharing enabling Bright Spots innovation

⁵ The Consultative Group on International Agricultural Research (CGIAR) has a number of Challenge programs within its system. The Challenge Program on Water and Food (CPWF) is a multi-institutional research initiative that aims to increase water productivity for agriculture to contribute to the global fight against poverty, hunger, environmental degradation and disease.

The project has been using a suite of knowledge sharing approaches for better identification of 'Bright spots', improvement of the mutual learning process between farmers and researchers, and facilitation of better ways of sharing vital knowledge and experiences towards both an outscaling and upscaling of knowledge and practices aimed at reversing land degradation. Three main ways of enabling are therefore :

1. Identification of innovation
2. Enhancing mutual learning processes
3. Outscaling and upscaling innovation

Further to these three main avenues, knowledge sharing can also help to enable innovation through supporting and improving the effectiveness of research processes, institutional arrangements, and partnerships. This enabling of innovation by knowledge sharing in these various ways will be highlighted through a presentation of the key knowledge sharing approaches used.

Farmer trials

As part of the research process to generate innovation, researchers from Gulistan University as well as some of the partner ARIs decided to undertake plant trial to better understand the systems and to test potential innovations. In the plant trials, held at Galaba farm, the following activities were undertaken:

1. Studies on application of Licorice for reclaiming of 105 ha area of abandoned land in Galaba Shirkat Farm
2. Crop-assisted Management of Saline and Waterlogged Soils

Through joint working between the farmers, University researchers and other ARI researchers, it enabled greater identification of innovation. It has also created an enhanced form of mutual learning as the trials have involved farmers directly in the research process.

Learning Alliances

Learning Alliances are “a series of connected stakeholder platforms, created at key institutional levels (typically national, intermediate and local/community) and designed to break down barriers to both horizontal and vertical information sharing and thus to speed up the process of identification, development and uptake of innovation” (Moriarty et al, 2005).⁶ The creation of learning alliances was planned as an important part of the knowledge sharing initiative within this project as a mechanism to continue the necessary learning and sharing around the topic. The Learning Alliances were also designed to help achieve the necessary outscaling and upscaling of innovations arising from the project research.

In the learning alliance approach the learning is focused around platforms at various levels with “the aim of bringing together a range of stakeholders interested in innovation and the creation of new knowledge in an area of common interest”(Moriarty et al, 2005).

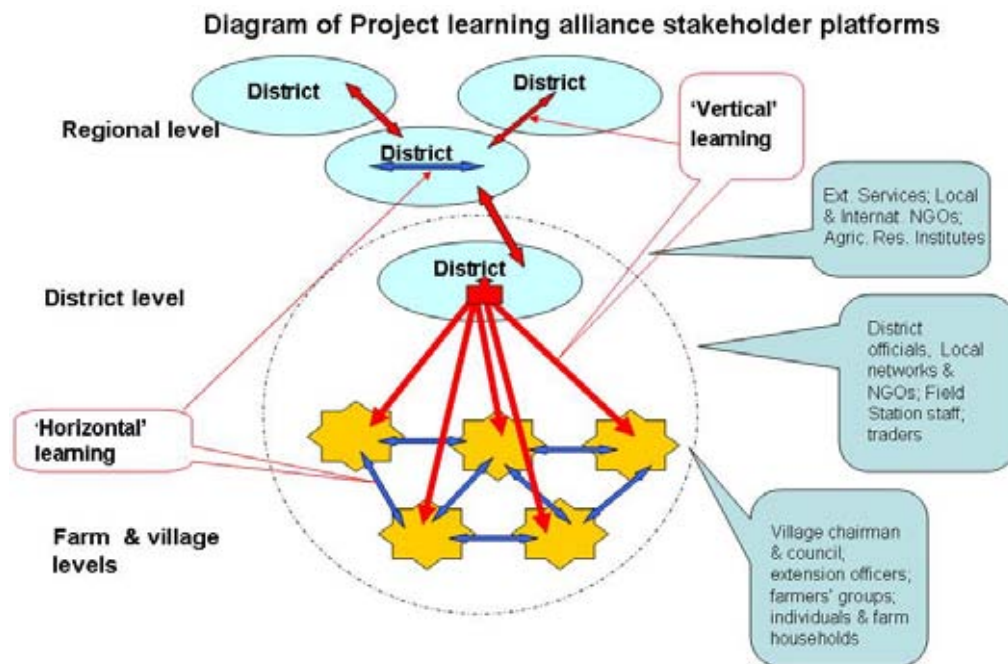
The conditions in which people in the project areas have lived in, it is not always easy nor effective to try to set up new groupings of people that do not know each other etc. It was considered appropriate and potentially fruitful to develop learning alliances out of already existing groupings or gatherings of people which can be effective means of knowledge sharing. There were several potential alliances that existed in some of the project locations. For example, in Uzbekistan there are Farmers Associations, in Kazakhstan there are

⁶ Quotation taken from the 'Background paper for the Symposium: Learning Alliances for scaling up innovative approaches in the water and Sanitation sector', by Patrick Moriarty, Catarina Fonseca, Stef Smits, and Ton Schouten, June 2005, Delft, The Netherlands.

Agricultural Cooperatives and in Turkmenistan –dehkan (farmer) unions can be listed as potential learning alliances, with sustained links. Furthermore, there are plenty of informal groups and links which may be identified and used for the purpose of knowledge sharing as learning alliances. The main goal of having such learning alliances is to create an environment for smooth knowledge sharing with sustainable up take by communities.

The creation of Learning Alliances has proved to be an important approach adopted within this project, aimed at creating a mechanism to facilitate the necessary learning and sharing of knowledge vital to developing, outscaling and upscaling ‘bright spots’ practices. Two Learning Alliances have been set up by the project, one of which is the Galaba Farmers Learning Alliance. The structure of these Learning Alliances is composed of farmers, specialists, local decision makers, and representatives of banks, lawyers, economists, and marketing specialists.

The main objective in creating Learning Alliances along with farmers in this project is to capitalize on the value of getting people together to establish shared understanding of the problem and the potential pathways for action. It is meant to provide a platform for knowledge sharing and mutual learning amongst stakeholders. The Learning Alliance approach facilitates an opportunity to participate in planning future change with the aim of increasing participation and buy-in for the implementation of activities to achieve that. It also helped to achieve upscaling which helps to effect changes in current resource and agricultural management policies.



Farmers Knowledge Fair

“In August 2006 there were was a Farmer Fair where around 400 farmers came and more than 20 International and National research organizations brought their technologies, ideas and tools to share with us. The format of these events was very structured and interesting. We had an opportunity to talk with scientists, peer farmers, see the display with some real field action performed and demonstrated by the researchers.”

Most often work of this kind has even been carried out in farmers' fields and aimed at benefiting the farmers. However, both local and international experts with technical background have often seen farmers as recipients of research results and not as being involved in the research process. Through the inclusion of knowledge sharing within the Bright Spots project, however, an attempt at making a necessary turnaround from this traditional behaviour was undertaken. The new knowledge sharing philosophy of this project aimed at creating recognition of (1) the value of farmer knowledge and experience, (2) the value of involving farmers in the research process as a way of increasing farmer investment in the results and impact of the results and (3) the improved project results through joint working and understanding.

One approach used to achieve this was the design and implementation of a Farmer Knowledge Fair. The farmer Knowledge fair was held in Gulistan Uzbekistan from August 28th-29th 2006. The main goal of this Farmer Fair was to let farmers present results of the project, both in terms of bright spots practices they have developed and implemented as well as innovative research outputs where they have played a role in designing, running and monitoring the land rehabilitation process. This event was also meant to allow an opportunity for knowledge sharing on multiple levels, between peers as well as with non-peers. For improving research process, knowledge sharing between researchers was facilitated allowing project researchers from all levels to interact and for information and experiences to be widely shared. Additionally other International Organizations involved in research and implementation of agriculture related activities and projects were also invited to take part in this event. This created an opportunity for external research review as well as cross-fertilization of ideas within the agricultural research field both strengthening research processes within the region. The event also allowed farmers from various areas to interact and share experiences, ideas and knowledge around innovative agricultural practices. The farmer fair, by bringing together various stakeholders, provided a platform for the various levels of stakeholders to interact, discuss and learn from each other- a situation which rarely happens. It also served to expose more intermediate and national level stakeholders to local/community innovations, providing them with first hand experience and consequent knowledge from which to base their decision-making and actions. The hope is that by engaging in the innovation learning process directly, they are better equipped to provide support to innovations and to aid in the effective replication elsewhere. Thus the Farmer Fair would serve to enable a vital process of upscaling innovations showcased at the event.

The Farmer Fair was an important mechanism which enabled both the upscaling and outscaling of innovation. By bringing together stakeholders at multiple levels to see, experience and learn about both the 'home-grown' bright spots as well as 'research-generated' bright spots, the innovations were upscaled. The Farmer Fair also brought together around 700 farmers. Some of these were bright spots farmers while others were representatives from other farming communities in the region. By exposing them to the various innovations both coming from the ground, as exhibited by farmers, as well as innovations developed through the research process, they became aware of possibilities for changes in farming practices and use of techniques for improving agricultural conditions and productivity. The knowledge is thus outscaled to a larger number of farmers through spreading of information by these key farmers.

Knowledge sharing to support research and institutional processes

In the 'back office' of the project, knowledge sharing approaches were also used to improve the research process, institutional arrangements and partnerships of the project. New knowledge sharing activities were added to the program of key meetings with partners to ensure more effective processes which support the research program itself. In January 2006, a series of National Planning Meetings were held in each of the three participating countries. These meetings were aimed at bringing together National Research Institutes, International Agricultural Centres and donors associated with the project to discuss, review and plan around the project activities. This type of meeting has usually been held in a formal style. The meetings held in 2006 for this project were injected with some knowledge sharing approaches with the aim of improving the interactions to

have more effective discussion, sharing of knowledge, reviewing, brainstorming and planning. The sharing of knowledge was facilitated through the use of various approaches including open space. By allowing a more open, participant-driven agenda and flexible system, the project was able to capitalize on greater sharing of information, ideas, and issues surrounding the project. A key highlight that was noted, was the surfacing of specific funding issues, which previously had not been expressed, but found their way out through the less formal approach utilised.

The second important event in which knowledge sharing techniques were employed was the First Annual Meeting of the Project. The mandate of this meeting was to report on progress of project during the first year of its inception (2005), present work plan for 2006, and for the Steering Committee to approve both the project report and work plan for 2006. A new approach with respect to the presentation of results and outcomes was trialled during this first meeting. In contrast to formal presentations which are the usual format, an interactive knowledge fair approach for the presentation of team activities in year 2005 was undertaken. The Knowledge Fair included the showcasing of the results of the project using posters, video and audio visual presentations, story telling and other media. Each component or part of the project was given a show space/slot they could display project outputs: (i) reports, (ii) brochures and docketts; (iii) publications as well as photographs of their activities. Additionally a short overview of progress to date and the 2006 work plan was presented by the project leader. According to the report on the event:

“The bulk of the annual meeting was spent in an open forum where project members were able to present the results of their activities in open discussion with free flowing debate on the outputs and achievements of project to date. Participants were encouraged questioning results, making comment and discuss results that were presented. This allowed considerable discussion to take place and individuals to share their ideas, concerns and questions related to the project activities and results.”

At the end of the event a number of the participants commented on the meeting and specifically on the approach used. Dr. Bayarsaihan Senior Agriculture Specialist from Asian Development Bank (ADB), who coordinates implementation of the given project commented that “the Annual Meeting was presented in a completely different style and approach”. He felt that “this had facilitated open discussion amongst all participants and allowed all to share ideas and thoughts.”⁷ From the perspective of the farmers, one commented that:

“A group farmers were invited to the National Steering Committee Meeting in April 2006, where we learnt about activities under this project in 3 countries – Kazakhstan, Turkmenistan and Uzbekistan This was very useful for us and we could share what we learnt when we came back to our rayon. We also had the opportunity to speak about the problems we are facing and the opportunities for collaboration and to share our views and ideas on the issue discussed during the high level meeting, along with project donors, International and National scientists. We came back home inspired and ready to communicate all the information to peer farmers, who are also quite desperate to increase their land productivity and crop yield, and are struggling each day to reverse land degradation.” (Avezov Tursunboy)

According to the organizers of the event “in the framework of the SCM we tried to introduce several components, designed around the logic and practice of knowledge sharing. To encourage a culture of

⁷ This quotation has been taken from the Report on the First Annual Meeting of the Project “Enabling Communities in the Aral Sea Basin to Combat Land and Water Resource Degradation through the Creation of ‘Bright’ Spots” project

Knowledge Sharing in the project, the NARES and IARC centers were suggested to present their results and finding in the format of Open Space. The rationale of this session was to challenge participants to impart information to an audience through innovative and creative techniques. This session opened the door for much greater involvement into discussion on the part of donors, IARC and other participants.”⁸

Conclusion

The development of innovative practices and new cropping systems for the management of saline soils and water is vital to contribute to poverty alleviation and improved food security of vulnerable rural communities. It can achieve this through community-led, efficient, inexpensive, environmentally feasible, and sustainable remediation in the Aral Sea Basin as has already been discovered through the Bright Spots project. The project has found that utilization of saline waters at point of generation will significantly decrease the pressure on limited freshwater resources, thereby allowing increases of flow in the Amu Darya and Syr Darya river systems along with improving the quality of water delivered to downstream users and, ultimately, the Aral Sea. The project therefore is able to contribute to increasing the productivity of saline soils and water through increased yields and crop diversification. This type of knowledge generation could have a significant impact on stabilizing productivity from these problem soils and hence income generation. But the question is more often whether this type of impact actually is being achieved by research projects such as this.

Through integration of knowledge sharing into the project, the research process, knowledge generation, learning, outscaling and upscaling surrounding innovation have all been improved. The project has generated valuable lessons of how to work together with farmers to discover innovations and how approaches to knowledge sharing can help in extending this information further. The project, with its various partners, has increased the knowledge base on technologies for reversing land degradation both through home-grown methods identified through the ‘Bright spots’ as well as through scientific plant trials. The subsequent role has been to transfer both local and experimental knowledge to a wider range of farmers and build capacity to implement these technologies. Consequently the project has also improved institutional arrangements and partnerships through the use of knowledge sharing approaches to increase effectiveness of meetings and research processes.

This type of increased collaboration encouraged by knowledge sharing is in itself innovative, especially within the still rigid post-Soviet context of Central Asia. It is particularly innovative in the way that it brings together researchers and farmers to achieve mutual two-way learning, exploring new ways to work together, and facilitating a format for extended learning and sharing. Through all of this the various innovations generated, both local and research, are jettisoned in new and multiple directions, giving a better chance of greater spread of improvements towards enhanced agricultural production and improved livelihoods.

⁸ Taken from the report on the First Annual meeting...