CHAPTER 7

APPLYING THE LEARNING ALLIANCE APPROACH

Photograph by Monique Mikhail.

The Learning Alliance experience in Nepal was an experiment in working with all stakeholders at all levels to concurrently garner partner support for MUS project implementation and propagate the idea of MUS throughout the country. Although the MUS movement is still small, it has achieved a great deal of traction with communities, NGOs, and government, which can be seen most clearly in one outcome: the idea and construction of MUS systems will continue well beyond the MUS project. This story has applicability to the upscaling of MUS globally.

Although the Nepal CP-MUS project did work to incorporate a formal Learning Alliance (LA) in its work, the expansion of the MUS concept occurred far more organically. Therefore, for the purposes of this chapter, we have chosen to broaden the conceptualization of "learning alliance" to include not just the formal set of relationships that were established to specifically represent the LA, but also all of the informal connections that were made; how the concept evolved within the minds of the implementers themselves; how the concept propagated through communities, organizations, and government bodies; and lessons/conclusions for scaleup drawn from all stakeholder impressions and ideas about MUS.

Information in this chapter is based largely on personal and group interviews that occurred during February–May, 2007. The individuals chosen were those within each government organization and NGO partner who had been the most involved in either MUS project implementation at the district level or the LA at the national level. Interviews at the national level were conducted in English, while interviews at the district and local levels were conducted in both English and Nepali with translation.

Interviews with IDE/SIMI staff at the national level included the following:

- Team Leader, SIMI
- Deputy Team Leader, SIMI
- previous Senior Engineer, IDE-Nepal; now Team Leader, Technical Assistance Microirrigation Project, DoI-NITP
- SIMI Engineer

Interviews at the local level included:

- group interviews with communities in Kaski, Syangja, and Lalitpur districts; personal interviews with a few leader farmers and local staff in these districts
- personal interviews with two Social Mobilizers—one working with the SIMI program and one working with the BDS-MaPS program
- focus-group meeting with Social Mobilizer/Community Mobilizer (SM/CM) staff during the annual area-level SIMI staff meeting in Kaski
- focus-group meeting with agricultural technicians, irrigation technicians, agricultural-marketing supervisors, and district managers

(AT/IT/MS/DM) during the annual area-level SIMI staff meeting in Kaski
- local implementing NGO in Kaski—SORUP Nepal

Interviews at the district level included:

- district partners—LISP-Helvetas, World Vision, District Agricultural Development Officer (DADO)
- attendance at Kaski workshop, report from Kaski workshop, report from Palpa workshop

Interviews at the national level included:

- NGOs
- SIMI partners—Support Activities for Poor Producers of Nepal (SAPPROS) and Center for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED)
- National Federation of Irrigation Water Users Association, Nepal (NFIWUAN)
- World Vision, Nepal Water for Health (NEWAH), IWMI-Nepal
- GOs. (For a diagram of the relevant government bodies see Figure 1.2 in chapter 1.)
- Department of Agriculture (DoA)
- Department of Irrigation (DoI)—Nonconventional Irrigation Technology Project (NITP)
- Rural Water Supply and Sanitation Fund Development Board (called the Fund Board)
- Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR) housed within the Ministry of Local Development
- Department of Water Supply & Sewerage (DWSS)—Community Based Water Supply and Sanitation Project (CBWSSP)

It was impossible to collect the information without bias, mainly because the interviewer was American. Bias in the interviews manifested in two ways: first, information, largely interviews at the local and district level, was lost or distorted during translation; second, it is suspected that the information given by government officials at the national level to some extent represented what these officials thought the interviewer wanted to hear. This was evident in the use of buzz words and the similarity in responses.

THE LA PROCESS — BUILDING PARTNERS FROM THE GROUND UP

FIRST STEP: SYSTEM CONSTRUCTION

See MUS Team Structure and Operation in chapter 2 for a review of the beginnings of MUS implementation by SIMI in Nepal. Because the conceptual evolution of MUS in Nepal started with IDE's microirrigation technology projects, its development addressed a need within the project and the communities. The actual MUS schemes began being built before the concept of a learning alliance was even introduced to SIMI staff. The fact that the concept of MUS in Nepal began with physical structures responding to a real need of the communities SIMI was working with had a great deal of influence on the success of its propagation.

TWO-TIERED APPROACH

Practical Advocacy

The SIMI project had not initially planned for MUS in its development, so as the MUS process began, SIMI soon realized that the number of communities that could be impacted through the project would be severely limited if project funds were not strictly allocated. Thus, a maximum budget allocation of NPR 30,000 ($428) per scheme was established for the first year of implementation. This was increased to NPR 40,000 ($571) for the second and third years. Considering that each MUS scheme costs at least NPR 100,000 ($703) to construct (some are up to NPR 300,000–400,000 or $4,286–$5,714), extra financing had to be sought. This funding crunch is what pushed SIMI to begin seeking matching funds from other sources. And it was the process of searching for partners that inadvertently developed MUS advocates at the local and district levels.

From the very first project with Chhatiwan Tole (chapter 3) of Chirtungdhara VDC, matching funds were sought to supplement the moneys that SIMI had available for the project. For Chhatiwan Tole, SIMI had already been partnering with Helvetas' LISP program so their support was an easy fit. Additional funding was requested from the local government (VDC). This set a precedent to look for matching funds from both NGOs and government and paved the way for future partnerships and MUS advocates. In 2003 the DADO, the District Soil Conservation Office, and DoI started contributing to the schemes as joint projects in Palpa, Surkhet, and Syangja districts.

Both the communities and SIMI staff (at the local, district, and national levels) have been involved in securing funding. Communities, assisted by SIMI SM/CM staff, sought funding from the VDC, NGOs working in their area, the District Development Committee (DDC), and district-level line agencies like DADO, while national-level SIMI staff garnered funding from

NGO partners and government agencies at the national level. SIMI maintained a focus on local funding, searching for support at the national level only when necessary.[1] Each district team had a unique approach to seeking matching funds, largely depending on the approachability of government officials in the district (i.e. the Chief District Officer) and the presence or absence of I/NGO projects. Some MUS schemes were built in partnership with up to 4 or 5 organizations. For example, the 45-household Kumalgaun project of Syangja District obtained financial support from the Soil Conservation Office, DADO, the local school, a local club, and SIMI. And while in all schemes the communities contributed labor and local materials, in some schemes they also contributed cash. Although it often took multiple meetings with the same official, funding was usually obtained. This had the benefit of building rapport between the community and potential partners from the very beginning of project planning.

In order to build momentum for MUS, SIMI arranged many informal meetings with potential partners at the district level. As the MUS project progressed, communities were increasingly referred to SIMI by an established GO or NGO partner with promises of partial funding.

SIMI and the communities built upon this initial rapport by extending invitations to partners to attend village-level meetings, consultation meetings, and trainings throughout the process. Partners became a part of the implementation process, building linkages between all stakeholders. Exposure visits were held, including visits of one community to another, of potential partner NGOs and GOs, and of national-level officials and international visitors. This proved to be a powerful and practical advocacy technique.

Conceptual Advocacy

About a year into the project, the concept of learning alliances was introduced to SIMI staff, and they began the more deliberate process of establishing an LA and sharing the MUS concept. This more conceptual form of advocacy occurred predominantly at the national level, although there were district and local activities as well. SIMI staff created a MUS brochure for initial outreach activities and began holding individual meetings with potential LA organizational partners at the national level.

National-Level Efforts On September 16, 2005, IDE-Nepal and SIMI organized the first National MUS LA Workshop in Kathmandu with about 100 people in attendance. This meeting, which included representatives from all levels, was organized to launch the MUS LA concept and garner interest from potential MUS partners. The concept of MUS was introduced, including the technologies SIMI had used to date, and advantages of the projects already completed were shared by community representatives. At the end of the meeting, SIMI requested that organizations who were interested in joining

the LA step forward; five organizations did so: NFIWUAN, the Fund Board, DoA, DADO of Lalitpur, and Kathmandu University.

Six months later, a follow-up 2nd National MUS LA Meeting was held with about 20 individuals from the organizations that had previously expressed interest and two other key organizations that IDE felt were essential to get on board—NITP and WaterAid. This meeting had an important outcome for the LA: it was agreed that NFIWUAN would become the coordinators of expanding MUS projects and the MUS concept at the district level. NFIWUAN has a large network of water-user groups and branch offices in 62 districts; they also have a committee where representatives from the Local Development Ministry, DoA, and DoI sit together and discuss the problems of water users; and their leadership was interested in propagating the idea of MUS. It was agreed that a partnership would be piloted in Lalitpur and Tanahun districts with NFIWUAN assisting in site selection, source identification, and social mobilization, while SIMI would provide technical support.

At this follow-up meeting, WaterAid expressed preference for the Federation of Water & Sanitation Users Nepal (FEDWASUN) to play a more primary role instead of NFIWUAN because NFIWUAN's experience was mainly with surface irrigation whereas the FEDWASUN has more experience with piped supply and would lend better experience. WaterAid added that the FEDWASUN was building as an organization and therefore was more active than NFIWUAN. However, IDE staff felt that NFIWUAN's organizational network in 65 of the 75 districts in Nepal and its connections with a host of organizations—government, private, donors, and civil society—put them in a better position to manage the LA. Conversely, FEDWASUN was a nascent organization with few established contacts and a smaller network.

One week later IDE staff met with key NFIWUAN representatives to work out a plan of action for both implementation of MUS projects and the MUS LA. NFIWUAN expressed that they did not currently have the funding to implement such projects, but that they had potential to raise money within the organization.

Subsequently, IDE decided to take some key LA partners for an exposure visit to Syangja and Kaski districts. This visit included NFIWUAN staff from Lalitpur, Kaski FEDWASUN central-level staff, DADO from Tanahun District, and DADO from Kaski District.

At the same time there was a meeting between interested individuals within Kathmandu University and SIMI to discuss their role in the MUS LA. The idea was to write a joint proposal to fund MUS research. This, however, has not come to fruition because the university needed funding support that SIMI could not provide. The only outcome of the partnership was the thesis work of one masters-level graduate student.

After the aforementioned field visit, IDE's BDS-MaPS program wanted to construct a MUS project in Lele village of Lalitpur District and was requesting funding from DoI-NITP and DADO-Lalitpur. IDE staff felt that it would be

Figure 7.1 A community WUC representative describes the benefits of MUS at the Kaski District LA Workshop

Photograph by Monique Mikhail.

beneficial to combine this practical advocacy with conceptual advocacy and hold a joint national and Lalitpur District LA workshop. This second LA workshop, held on May 26, 2006, resulted in two major outcomes: a promise from NITP to fund NPR 100,000 ($1,429) of the Lele scheme and DADO-Lalitpur to provide agricultural extension support.

District-Level Efforts In the beginning of 2007, IDE staff felt that the district teams should follow the national-level approach and integrate practical and conceptual advocacy. This resulted in the planning of district-level LA workshops for Kaski, Palpa, and Lalitpur districts (see Plate 1 for a map of the MUS project districts). Kaski and Palpa districts were chosen for workshops for two reasons. First, another IDE project goal consisted of building ten additional MUS systems in these two districts. Second, staff realized that there were several more NGOs in these districts that were well positioned to become involved in MUS construction if the information were disseminated to them about MUS. Lalitpur District was chosen due to its proximity to Kathmandu and thus had the potential ability to encourage interaction between district- and national-level organizational representatives.

The Kaski workshop was held on March 29, 2007, in Pokhara (see Figure 7.1). Organizations that SIMI had already worked with in the district were invited as well as new potential partners. The first half of the meeting included presentations by SIMI, community WUCs, DADO, and NITP to explain the MUS concept, how the projects had taken shape in their districts, and the community-level outcomes since project completion. The second half of the workshop was a breakout session into smaller groups that discussed the roles,

Figure 7.2 A community WUC representative shares his experience at the Palpa district workshop

Photograph courtesy of SIMI.

barriers to scaleup encountered, and areas of improvement in operations of various stakeholders—GOs, NGOs, local government, and communities. The Palpa workshop was held on April 23, 2007, in Tansen and had a similar structure to the Kaski workshop except that instead of breakout groups in the second half, all attendees together held a group discussion about the roles of GOs, local government, and NGOs, and a potential working modality of future MUS efforts (see Figure 7.2).

The Lalitpur District workshop was another joint district/national workshop held on July 2, 2007, with NFIWUAN acting as coorganizer in support of IDE. This workshop focused more on presentations by key national-level representatives and discussion about the way forward with MUS nationally. Bilateral follow-up meetings are being established between SIMI and all of the interested organizations listed above.

INFLUENCE OF INTERVIEWS

The interviews helped to crystallize support of organizations that had previously shown lukewarm interest, particularly at the national level. National-level representatives of various GOs with higher status awarded the American interviewer meeting times that would have taken much longer for Nepali staff to arrange and would have been much shorter. Additionally, in multiple interviews, feedback was received that going through the interview process helped the interviewees solidify their understanding of and interest in MUS.

PARTNER CONCEPTUALIZATIONS

Understanding the way that partner organizations conceptualize MUS is essential for understanding the progression of the LA and the potential for MUS scaleup in Nepal.

UNDERSTANDING OF MUS

The first question asked in interviews was how the interviewee would define MUS. Several different ways that the concept established itself in their consciousness were revealed. Sometimes individuals would describe MUS in multiple ways, while at other times interviewees were very firm in their specific definitions.

Dual vs. Multiple Use

There was disagreement among various stakeholders about whether MUS had dual or multiple functions. Several stakeholders, including a local partner NGO, DADO, and World Vision, conceptualized MUS as only having two purposes— drinking water and irrigation water. One DADO representative was particularly adamant that it was only dual purpose. This was repeated by other attendees of the Kaski District workshop who said that it was misleading to call it multiple-use water systems instead of dual-use water systems. In the DADO representative's perception, the communities were also not always using the water for domestic purposes other than for drinking. An NITP engineer countered by saying that any system used for more than one purpose was MUS.

Others were more inclusive of additional uses for MUS systems. NEWAH and NITP explicitly mentioned cattle watering as a use[2] but emphasized drinking and irrigation as the primary purposes. The Fund Board water and sanitation engineer included microhydro in his definition but subsequently emphasized that drinking water is the primary purpose with microirrigation inclusion contingent on sufficient source flow. Helvetas-Palpa also included microhydro in their description of MUS.

NFIWUAN had the broadest definition, although at the base it assumed one sector in control of the project. NFIWUAN's definition of MUS was "from one irrigation system or one drinking water system, water can be used in different sectors." When pressed further, drinking, irrigation, hydropower, agriculture, and other industries were listed.

Not a New Concept to Villagers

Some that were interviewed maintained that MUS was not a new idea and was simply a representation of what villagers in Nepal have been doing for years. The executive director of the Fund Board typified those who visualized MUS this way. He explained, "it is what people have been doing in Nepal

since birth." The DoA chief from the monitoring and evaluation (M & E) section said that he was originally a farmer and had used the same water for multiple purposes all his life but that farmers did not know how to properly manage the water on their land. He thought that the MUS project was necessary for Nepal because it legitimized long-established water-use practice and was a valuable way to teach farmers how to apply more efficient water management.

The Helvetas-Palpa representative said that although MUS was new terminology, the idea has already been applied in Nepal. He mentioned that they were supporting a surface-irrigation system that was also being used for hydropower, and he highlighted some of their projects where they collect domestic wastewater in a tank and distribute it through irrigation canals.

The NFIWUAN representative stated that farmer-managed irrigation systems were de facto MUS and that farmers had practice using water in multiple ways without deliberately planning it that way. He further suggested that MUS was actually just a term for traditional irrigation systems in Nepal. The NITP engineer described MUS as the traditional techniques of developing a water supply to integrate the provision of domestic water with that for productive uses like cash-crop irrigation, fish ponds, and livestock.

Vehicle for IWRM

The representative from the DoA Planning Division delineated the social and economic components of MUS by describing it as "tapping the natural source of water in such a way that the community benefits in terms of meeting the household needs plus generating some economic activities." He went on to explain that MUS is "the optimum use of water in a sustainable way" and mentioned that for the DoA it was a new approach to water resources. This broad definition was mostly reflected in the answers of individuals who had worked with water resources and were familiar with the Integrated Water Resource Management (IWRM) concept.

Others went further and actually mentioned IWRM. The Fund Board said that MUS is different terminology for the IWRM concept and that the crux was to manage water properly. The NITP engineer, when giving his talk during the Kaski workshop, said that MUS was a way to "realize the true sense of IWRM." He mentioned the national water plan and said that the government was good at planning for IWRM but less successful at actually implementing it. He suggested that MUS be used as a way to actualize the IWRM concept.

Other Definitions

Some NGO partners saw MUS as more of an appropriate technology than a concept. CEAPRED mentioned that MUS was a "strategy, not an objective" for their organization and that it is simply a technology that allowed for water to be properly utilized. World Vision also saw it as an appropriate technology.

Others discussed MUS as a tool for sustainability. SAPPROS mentioned that MUS was only useful in areas where water was scarce and was simply the use of excess drinking water for irrigation. The M&E Chief of DoA described MUS as the "optimum use of water in a sustainable way" and that it was a way to tap water sources without exhausting them quickly. DoLIDAR said that MUS was "planning to make the proper use of water." IWMI-Nepal saw MUS as a scale-based concept: something that was primarily developed to address small-sized water needs and would not apply on the larger level.

RELEVANCE OF MUS FOR NEPAL

Water Availability vs. Access

Most people interviewed emphasized the irony of fate that Nepal is the second most water-resource-rich country globally and yet most of their population has difficulty accessing water. Compounding the incredibly uneven seasonal rainfall patterns (explained in chapter 1) and geographical complexities of development in much of Nepal, effective distribution and utilization of water resources remains a struggle. Some interviewees mentioned that particularly in the hills there is little opportunity for irrigating and that source sizes are insufficient for constructing typical larger drinking water systems. Most thought that water could be more efficiently and effectively used through MUS.

Effective Use of Water Sources

Several individuals also highlighted that, particularly in the hills of Nepal, there are many small sources of water available for small rural communities to use. The Deputy Director General of the DoA Planning and Human Resource Division said that he was "excited that there was a way to use them [small springs] to benefit the communities." The fact that MUS has identified the type of technologies that can effectively use these small sources for multiple sectors was seen as a great boon to MUS.

Although most mentioned the hill region of Nepal as the most likely to benefit from MUS, that could be due to the fact that SIMI had worked on MUS in these areas. However, the Chief of M&E at DoA extrapolated from current MUS projects to say that MUS would be a cost-effective way to make drinking water more easily available in the Terai. If, in addition to providing drinking water , bore wells and pumps were installed for irrigation, the irrigation component should pay for the drinking water component. He also mentioned the relative ease of kitchen gardening in the Terai versus the hills due to the flatness of the land.

Helpful to Poor and Low Cost

Others who were interviewed stated that MUS was relevant to Nepal because it was helpful to very poor farmers with small landholdings. NITP mentioned involvement of even the poorest of the poor and the affordability for farmers

who have not traditionally had access to water for productive use. The provision of a revolving fund in certain districts is an additional incentive for communities. His perception was that the recovery rate to date of MUS systems was 100 percent. The MUS systems in conjunction with microirrigation technology have allowed farmers to increase vegetable production with subsequent gains much higher than initially envisaged. These positive outcomes have led many to view the benefits of MUS as far outweighing the costs. And some even picture the cost effectiveness in a broader context. The Deputy Director General of the Planning Division of DoA saw the investment reduction possibilities in building MUS instead of two separate systems (drinking water and irrigation supply).

One major component of the cost effectiveness that interviewees mentioned was the short-term payoff. Not only did systems only take a few months to complete, but farmers started seeing the rewards within one growing season, enabling them to earn back their investment in MUS and the accompanying microirrigation kits quickly. Organizational contributors to the system could see the benefits of their investment shortly after it was made, leading to a variety of manifestations that will be mentioned later.

Community Involvement

A few individuals felt that MUS was most relevant to Nepal because of its community ownership approach. The Fund Board claimed that the most critical change was the social development that occurred when people worked together for the common goal of MUS. NEWAH suggested that through MUS, people in the middle hills would become more aware about the appropriate use of water and would be able to then share their skills with other areas of Nepal. Helvetas-Palpa mentioned the relative ease of the MUS-system operation and management for communities as compared to more standard water-delivery systems in the hills.

Small Change from Current Design with Large Payoff

On the other hand, several people believed that MUS systems were only a small diversion away from the way water is supplied to hill communities currently; with only a small shift in design, a large benefit could be garnered by communities. According to the DADO representative, all districts have an irrigation budget with some money earmarked for pipe irrigation that could be used to construct MUS for a more beneficial outcome.

The engineer from NITP said that MUS systems were a "good combination of traditional thought and modern technology" with minimal extra management effort and cost but large returns. He had calculated with his own data from Rajyachhap in Ramechhap District that the difference in cost between a traditional drinking water system and MUS was only 37 percent, yet on 0.075 ha of land a farmer could cultivate eight varieties of vegetables.

The Deputy Director General of DoLIDAR referred to the master plan they are currently creating for optimal use of water in small watersheds of nine districts. He felt the government climate was ripe for MUS because of the current shift toward optimal-use planning at the district level.

Other Thoughts

Other thoughts on the relevance of MUS for Nepal included:

- Making the area near the house more productive
- It is important for gender equity because women can work in the garden and earn some money for more financial independence.
- Irrigation of land less frequently used for agricultural production. In the past farmers were limited to land where irrigation facilities were available, but now bari land has become more important than khet because it is earning higher returns.
- Reduction in soil erosion with use of microirrigation
- If more vegetables are produced in Nepal, more money will stay in the local economy instead of going to vendors from India.
- Improved health

CHANGE OF IDEAS THROUGH INVOLVEMENT

Involvement in MUS projects definitely had an impact on all involved, particularly in their conceptualization of water resource management. For example, a representative from SORUP, one of IDE's local implementing partner NGOs, said that he had learned how to convert land: "I never thought that the area that was dry like desert could be productive, but through MUS it has become green." World Vision was surprised that after participating in one pilot study in Kaski, neighboring communities were requesting MUS systems from them. Although they had been very hesitant about MUS at the onset of the project, this feedback confirmed its value. And CEAPRED staff said they had learned that efficient water resource management is a practical possibility, not solely an aspiration.

The NITP coordinator said that his concept of MUS has become more complex through involvement in the MUS project. It has raised a concern for him that due to population growth, small water sources will be incapable of supplying sufficient water for both domestic and irrigation uses in the future, causing systems that are currently MUS to ultimately be redesignated solely for domestic purposes. Through involvement in MUS implementation, he has honed his idea of which projects are appropriate for NITP involvement.

The Deputy Director of the DoA Planning Division said that MUS has encouraged a new type of institutional collaboration. Although prior there was institutional collaboration on the supply side, it is now on the demand side. He said that the farmers are the force making government institutions work together to adequately address the farmers' needs. The Chief of DoA's M&E

section declared that through working with MUS, he has decided that MUS scaleup is essential, and he is beginning to think about future possibilities.

Even SIMI staff's thoughts have evolved through the MUS project. At the AT/ IT/MS/DM meeting in Kaski, staff stated that due to existing practices prior to MUS, they believed that water resource development schemes were necessarily expensive. After MUS implementation they realize that it can be done much more cost-effectively. They also noticed a difference in farmer contribution: prior there was low contribution from farmers, but due to the small investment required, fast returns, involvement of women, and scheme ownership, they have become much more willing to contribute. One Irrigation Technician was also skeptical that the area under vegetable production would actually increase in the villages post-project, but she has seen this transformation firsthand.

BENEFITS/DRAWBACKS FOR ORGANIZATIONS INVOLVED

Although most organizations highlighted the changes they had seen in the communities, they agreed that there had also been positive impacts for them. All organizations said that if their target community benefited, then they as an organization felt successful. CEAPRED, a SIMI partner working directly with communities, mentioned that MUS had eased the process of microirrigation technology uptake, making work for their staff much easier. The M&E chief echoed this sentiment, citing that the farmers now see the DoA in a more favorable light, making their work easier.

As a small local organization, SORUP said that through MUS projects their staff skills have been developed, and they have learned more about community wants and needs and how to better assist vulnerable communities. Donors have been impressed with their MUS work, which has legitimized them as an organization and allowed them to launch new programs. The Deputy Director General of the DoA Planning Division mentioned that they, too, have benefited from knowledge gain.

World Vision stated that since their target is children, MUS has been a great way to reach their target community, particularly the nutritional aspect of projects. Their Kaski District office has benefited because they are able to share their knowledge and technology with their other nine districts offices in Nepal. They also benefit from the partnership with SIMI through knowledge gain and exposure. But predominantly they were pleased that they could share MUS successes with their donors in Australia. On the flip side, World Vision mentioned a downside to working with SIMI on MUS: World Vision supports organic agriculture and does not advocate the use of agrochemicals, but because SIMI gives training on the use of agrochemicals, communities are now requesting them from World Vision.

Helvetas-Palpa mentioned that technical development from their partnership with IDE was the main benefit they were receiving. Additionally, since

they acted more as a donor on MUS work, they were pleased that it was cost effective and currently appears to be sustainable.

The NITP coordinator mentioned that his staff was able to see the direct benefits of the project they were contributing to. Whereas for large projects it is difficult to see direct community benefits, with MUS systems a large change in the communities could be witnessed within a short amount of time. This has boosted the morale of NITP staff and motivated them to work more on smaller projects. (As will be discussed below, a desire to work on small projects is unusual for DoI staff.) He also brought up the positive impression on visitors and subsequent accolades NITP received. Most notably, the DoI Director General visited a few MUS projects and was amazed at the impact, making it much easier for the NITP coordinator to advocate for future funding.

DIFFERENCES BETWEEN MUS AND OTHER WATER RESOURCE DEVELOPMENT PROJECTS

Many interviewees said that one major difference between MUS and other water resource development projects in Nepal was project size. While most water projects are built for larger populations using bigger sources of water, SIMI works in areas with water scarcity, benefiting individual farmers and small communities, particularly the poor and marginal farmers. The small size also reduces the cost and the time frame, as mentioned above Unlike larger systems, MUS systems are very low-cost with a short completion time and immediate benefits for farmers.

NITP also pointed out that the coordination of MUS was very effective. IWMI-Nepal stated that the MUS systems were more easily managed than typical water resource systems because they used simple technology.

At the SM/CM meeting, SIMI staff stated that they believe there is better community buy-in with MUS because it satisfies different groups of individuals—those more interested in the domestic component and those more interested in the irrigation component. They felt that the provision of a well-functioning management committee and caretaker at the community level helped make the systems more successful. And awareness creation on effective system management within the community was a critical component. They felt that due to the significant community contribution to system construction and full management responsibility, the community fully internalized ownership.

SHARING OF THE CONCEPT

Much of the spread of the MUS concept in Nepal occurred through partner organizations. Most partners said that they utilize all opportunities for MUS advocacy, sharing the concept within their organizations, with village communities, donors, other partners they work with, and at meetings and conferences. The idea spread organically through the existing and growing networks of stakeholders associated with MUS. The more bought-in to the idea the

person explaining it was, the more he shared it with others. However, even if the person was not a strong MUS advocate, once he began sharing the idea and receiving positive feedback, he became a stronger advocate. This was most true if a field site visit accompanied the explanation. See Table 7.1 for a detailed list of organizations with whom partners shared the MUS concept and some of the outcomes and responses.

Table 7.1: Sharing of the MUS concept by partner organizations

Organization	Group/Organization/ Person They Shared MUS with	Connection to That Organization	Outcome/Response
	partner orgs		
	communities they work with		more demand for MUS
	local government officials		
CEAPRED	Secretary of the Ministry of Agriculture	SIMI advisory board	CEAPRED was asked to promote microirrigation technology and MUS through another project because of their familiarity with the programs through SIMI
	Fund Board		they have not implemented MUS
SAPPROS	communities they work with	Poverty Alleviation Fund project and community infrastructure projects with DANIDA and Rural Community Infrastructure Works	more demand for MUS

Organization	Group/Organization/ Person They Shared MUS with	Connection to That Organization	Outcome/Response
	DADO-Kaski		funding support for MUS projects; this particular DADO has become a strong MUS advocate
SORUP	VDC councils	weekly meeting with 5–6 VDCs in the area	exposure visits arranged; 3–4 requests from other communities in these VDCs for MUS projects
	munucipal development corporation		shown interest but not yet given financial support; provide legal assistance such as certifying the source and providing public land for the tanks
	district irrigation office		shown interest but not yet given finacial support
	forest service		permits to dig pipelines
DADO-Kaski	all other DoA staff in the region	quarterly regional review meeting	most liked the idea; one DADO representative did not like SIMI because felt that SIMI took credit for his work; SIMI-Nepal spoke with this DADO representative and worked through the dispute

Organization	Group/Organization/ Person They Shared MUS with	Connection to That Organization	Outcome/Response
DADO-Kaski	World Vision	have an MOU with them for agricultural backstopping	encouraged World Vision to support the pilot MUS project at Patneri in Kaski
	DDC	through a planning committee he is a member of, he is encouraging them to use their Trust Fund money for MUS	farmers are demanding drip irrigation but not MUS; if farmers demand MUS, the Fund will invest in it
World Vision	9 other district World Vision development programs within Nepal	within WV	others are waiting to see a longer-term impact from the project to make sure it is sustainable
	20 partner organizations in Kasi	work on projects with them	also waiting to see long-term impacts
	farmer's forum—monthly platform at the regional level to get farmers, political leaders, government officials, businesses, journalists, and local NGOs together to discuss farmer issues	collaboration tool they set up	

Organization	Group/Organization/ Person They Shared MUS with	Connection to That Organization	Outcome/Response
	DADO in the districts where projects are		
	National Agriculture Research Council		have arranged field visits
	forums where the NITP Coordinator presents papers		
NITP	Ministry of Water Resources, Water and Energy Commission Secretariat, retired officials and director generals of other agencies	irrigation day at the national level	presentation of the Lele case study; still some perception that irrigation should do bigger projects although most people think they are on the right track
	DWSS	part of Subproject Management Unit (SMU) technical team for LEMI project	suggested to go with DoLIDAR instead of them because they work on larger projects
	DoLIDAR	part of SMU technical team for LEMI project	they are thinking of incorporating microirrigation in general in their work, but may use the MUS approach as well
	Department of Women Development	part of SMU technical team for LEMI project	
	Society of Irrigation Engineers	presentation at their national forum	positive feedback on the concept

Organization	Group/Organization/ Person They Shared MUS with	Connection to That Organization	Outcome/Response
DoA-Planning Division	other colleagues at the DoA	microirrigation training module—MUS is cited as an example in this	
DoA - M&E Section	within DoA - Engineering Director, Director General, Planning section Director, Agriculture Development Officers of all districts	gives regional workshops and visits all district offices	the concept is good but adjustment in policy is necessary to really include the drinking component
	head engineer of DWSS in Palpa	Palpa LA workshop	he agreed that using the excess water from drinking water projects (for projected population growth) for productive use now is a good idea
	DoI	bilateral meetings	
Fund Board	Poverty Alleviation Fund	bilateral meetings	
	all staff in the Fund Board		
	support organizations	through technical manuals on microirrigation technology	

Organization	Group/Organization/ Person They Shared MUS with	Connection to That Organization	Outcome/Response
NEWAH	other five offices of NEWAH		presentation/internal discussion about MUS
	DoI	observed field work	were impressed and convinced they should use their funding on MUS activities
Helvetas-Palpa	partner orgs	they meet quarterly with partners	
	DDC	local-level meetings	
	VDC councils	local-level meetings	
	other development organizations	in development forums	
NFIWUAN	member water-user groups	informal meeting with agenda item about MUS	
	central level within NFIWUAN	meeting	
	Andhi Khola Users Association		
	5–6 users associations in Syangja and Palpa		

Organization	Group/Organization/ Person They Shared MUS with	Connection to That Organization	Outcome/Response
	NITP		
	central committee member of the communist party		
	former agriculture minister		
NFIWUAN			
	Intellectual Resource Mobilization Group		
	National Forum for Advocacy Nepal	other organization some within NFIWUAN are affiliated with	
	3–4 members of ADB bank in Galyang		

LOCAL BARRIERS TO MUS SCALEUP

Differences in Socioeconomic Status

One concern of a few NGOs was that the socioeconomic disparity in villages could cause problems because the purchase of microirrigation technology might be too costly for the poorest households. There was a particular concern for the landless who would be contributing to scheme construction but not be able to utilize the productive-use water.

Availability of Water

Some saw availability of water as a potential barrier. If there is no water available or it is already being used by other communities, then a MUS system cannot be built there. As NEWAH expressed, source sizes in the hills may not be large enough to supply bigger settlements. NITP's concern about future irrigation potential with use of small sources for MUS is influencing the projects they will support. Concentrating on areas where water is abundant enough for both uses well into the future limits the location of NITP-supported MUS projects, particularly in water-scarce areas.

Too Costly

Some individuals were worried that MUS would be too costly. This argument was largely given by those who had not yet been involved in implementing MUS projects. For example, the Fund Board was concerned that if irrigation were included with drinking water projects, it would increase the amount of contribution requested of villagers, thereby decreasing buy-in.

While this argument was largely disproved by actual project outcomes, there were other cost concerns based on implementation experience. SORUP worried about communities where bari land was further from the houses, increasing the cost of the transmission line. The DoA M&E Section was apprehensive about working with communities whose only available source was at a cost-prohibitive distance from villages. A DWSS limitation mentioned at the Palpa LA workshop was the cost of treating water for smaller projects. It is costlier to supply treated water to a small number of households. And if treated water is then used for irrigation (as in the double-tank, two-line distribution systems), it is a waste of financial resources. However, if the overflow from the domestic tank would alternatively not be captured, then this may not be the case. This begs the question, "what happens to excess water in a DWSS system that is not needed for domestic purpose?"

Potential for Water Conflict

A major concern of some interviewees was the possibility of water conflict. Both NEWAH and the Fund Board were worried that by providing irrigation water in addition to drinking water , irrigated land area would increase and upstream users would use too much, harming the downstream users and causing conflict. NEWAH raised the potential for disagreements over location of tapstands in the villages and water access. While SIMI has had experience with these types of disagreements, they are often solved by community buy-in and participation through the WUC.

Difficulty in Registering WUC

At the Kaski LA workshop individuals indicated that the procedure for registering the Water User Committee (WUC) was too difficult. The District Water Resource Development Committee is responsible for deciding source allocation. Yet frequent absences at committee meetings prevent a full quorum for decision making, causing delays in action and frustrating the community. One individual said, "the problem is not the system; it is the systematic behavior of those in charge."

"The problem is not the system; it is the systematic behavior of those in charge."
—breakout group during Kaski LA Workshop

INGO and NGO Barriers

One breakout group at the Kaski LA workshop outlined several NGO barriers to scaleup as well. Most agreed that NGOs do not have enough funding for wide upscaling of MUS and that it is the government's responsibility to fund MUS. Another constraint mentioned was donor influence limiting the flexibility of NGOs to act. Some felt that there should be a uniform implementation procedure between NGOs for MUS because communities are sometimes playing one NGO off the other to fulfill certain demands. World Vision reiterated this sentiment and claimed that a more cohesive joint monitoring-and-evaluation team between SIMI and partners was needed. Another barrier described was the difference in planning sessions between organizations, which did not allow them to plan together and provide joint funding easily. Political instability in the country and the difficulty of working in high conflict areas was also listed as a constraint.

Other Barriers

SORUP mentioned the potential problem that in some areas the source quality might not be good enough for drinking water . IWMI-Nepal saw access to markets and infrastructure as the primary constraint to MUS because villagers might be less willing to put money into the scheme and microirrigation technology if they lacked access to input and output markets. He cited linkages with agriculture extension as a potential solution. At the Kaski LA workshop, lack of sufficient exposure to technical solutions for water resource use was considered a limitation. And, the varying approaches of NGOs and government organizations toward project implementation sometimes limited effective coordination between the two and did not necessarily match the communities' ideas of what they wanted. Attendees at the Palpa LA workshop also described the poor unity between people of varying castes and neighborhoods as a major impediment to MUS at the local level.

GOVERNMENT BARRIERS TO SCALEUP

General Government Barriers

The most commonly listed problem with all government bodies was a lack of coordination and communication within, between, and among them. For example, the Director General of DoLIDAR is part of the coordinating body of the NITP pilot MUS project (this project, called LEMI, will be described later) yet his Deputy Director had heard virtually nothing about MUS when interviewed. Government interviewees mentioned that it was difficult to coordinate with other GOs because of their different policies and planning. Each GO simply wishes to meet

"Coordination between, within, and among government agencies is a huge barrier."
—CEAPRED Executive Director

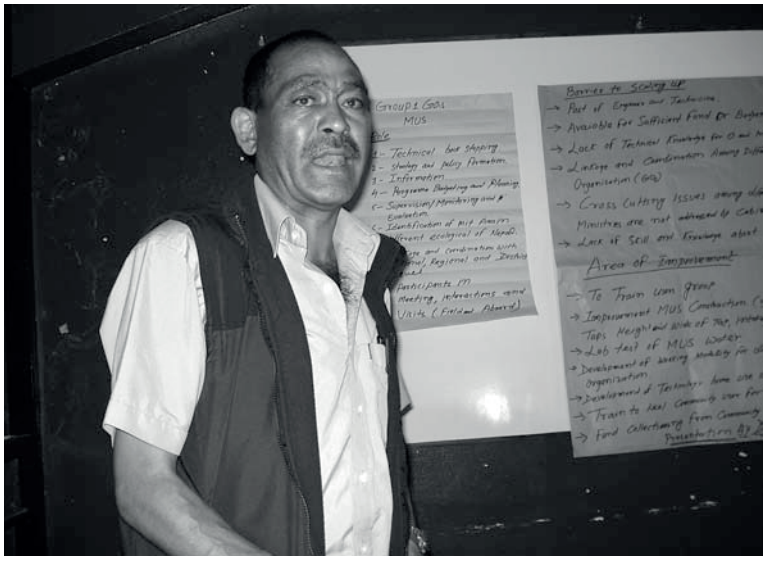
their own plan with their own effort and minimize work with other GOs. Exacerbating this are counteracting policies within various ministries on some cross-cutting issues. Although a program like MUS is inherently interdisciplinary, Helvetas—Palpa felt that future MUS development should seek to include the fewest number of GOs possible to minimize the complexity of coordination.

World Vision suggested that the attitude and knowledge of individuals within the government had a huge impact on whether or not MUS would be able to achieve wide scale expansion. Political influence in providing projects for certain communities was seen as a hurdle for a larger scale push. Another major problem mentioned was lack of exposure to the idea. NEWAH explained how the bureaucracy in Nepal was not interested in change or attempting new things and that the entire structure of the government was designed to hold back someone who was attempting to be innovative. Another major problem heralded by most participants was the lack of government funding available for such type of innovations.

Local Government (VDC and DDC) Barriers

At the Kaski LA workshop there were several local government barriers delineated by participants (see Figure 7.3). First and foremost, the recent political situation in Nepal has been rough on local governments. While the DDC and VDC used to have elected committees to run them, due to the instability in recent years committee elections have been suspended, leaving only the

Figure 7.3 The District Agriculture Development Officer of Kaski describes the barriers to scale-up discussed in his breakout group during the Kaski District LA Workshop



Photograph by Monique Mikhail.

appointed VDC Secretary and the Local Development Officer in charge. And, in many VDCs, there has not even always been a Secretary. Without an effectively functioning and accountable local government it is difficult to upscale any type of project.

Planning can also be difficult because government budgets are never released on time, so even if money is allocated for MUS projects, the local government is not timely in delivering the funds, making it difficult for NGOs and communities to plan around the funding. What makes matters worse is that the planning schedules of the government are different from those of NGOs, making matching funding a difficult task. But, government officials also have difficulties in the way NGOs approach planning. The Kaski Local Development Officer said that NGOs and communities come to him with preplanned projects and he is forced to either accept or reject them wholesale without the freedom to be part of the planning process.

Sometimes the government agrees to give matching funds for MUS projects, but delivery of materials and funds is delayed due to extensive bureaucratic processes and the cost of the MUS scheme increases daily during the delay. For example, in one project in Palpa it took two years to get the government payment. And, according to government rules, scheme estimation must be based on the district rate for materials. However, the district rates and the market rates are vastly different because the district office very rarely updates their rates. Accurate cost estimation becomes near impossible and procurement of adequate funds more difficult.

SORUP mentioned that the local government can also withhold permission for access to the water source from a community. In one example, the VDC did not allow the community to use a water source because the community was in the neighboring municipality while the water source was within the VDC.

Local government also needs to have policy established from the central level in order to fully push forward with MUS implementation, yet local government feels that central-level officials do not take their needs seriously.

Government Organization (Local Line Agency) Barriers

The major impediment mentioned for line agencies at the local level was lack of technical manpower. DADO-Kaski stated that there was no provision of engineers and technicians in DADO offices and no technical knowledge for operation and maintenance on MUS. In order to build a MUS system, DADO would need an overseer, yet no overseer was available in his area, and the district and central audits made it difficult to hire an overseer from another area.

The Kaski DADO also mentioned that he does not have a budget for hybrid tapstands but only piping, so the components of the MUS systems he can support is limited. The Western Region Sub divisional Irrigation Office

Chief Divisional Engineer of the DoI referenced the same problem in saying that they are allowed to build an irrigation canal and reservoir tank but do not have provision for a piped distribution system, limiting the elements of MUS they can support.

NITP further described the lack of sufficient money for field staff travel, daily allowances, and fuel. Their small budgets must be stretched to cover all communities they work with, limiting the number of village meetings that can be attended, and making the staff reluctant to do projects that require frequent village visits. Budget constraints for field level work are aggravated by the tension between district-level irrigation departments and NGOs. The government conception is that NGOs have been receiving a lot of money without transparency in its use, creating discord between the NGOs, communities and GOs. GOs are worried about being tarnished by this reputation and are also jealous of the money that NGO staff have access to. Although the government has a larger pot of money, it is much more difficult for them to spend it, and implementing staff at the local level only receive a very small amount to spend on their work.

National-Level Government Barriers

Respondents repeatedly cited the need for policy at the central level as the primary government barrier to MUS upscaling. DoI makes policy only for irrigation whereas DWSS makes policy only for drinking water projects, etc. To give priority for MUS and allow for the necessary mechanisms, it would need to be specifically mentioned in the planning documents of multiple agencies. NGOs, local-level government officials and local line agencies all mentioned that even though they were the implementers, it was necessary for the central government to enable MUS activity by creating specific MUS policy and providing appropriate funding. NITP more specifically suggested that although each department has their own regulations, general water supply and irrigation regulation both fall within the Water Resources Act, which could be changed to reflect an emphasis on MUS.

Interviewees also often revealed an overall lack of funding for new programs in their budgets. For example, the Deputy Director General of the DoA Planning Division said that there simply was not enough money available in their budget currently for wide-scale MUS implementation. However, this was counteracted in other statements by some that building MUS would actually be cheaper on the whole for government (although not the department implementing) because it would be multiple uses from one distribution system instead of multiple distribution systems.

And, even at the national level, the problem of sectoral funding arose. NITP said that they were satisfied with irrigation-plus systems and would promote irrigation-dominated water supply projects because they were not allowed to construct drinking water supply projects from their funding.

Likewise DWSS–CBWSSP is not allowed to supply irrigation water with their systems and said it is difficult to mobilize and coordinate resources between departments. The Fund Board also mentioned that DoI and DoA can only provide irrigation pipe and that they were only allowed to provide materials for drinking water systems. On top of this, and as mentioned before, coordination between ministries is very difficult. Some went on to say that having all agencies working on MUS would be inefficient because it would overlap responsibilities.

The Fund Board saw two different perspectives in development—macro and micro. Although they mentioned that the two needed to be harmonized to some extent, they noted that the national-level policymakers think on a macro scale: large projects at the national level. Their view was that a holistic approach such as MUS would never work on a bigger level, but only with small-scale local projects, which national government officials are not as cognizant of.

Overall, individuals felt that garnering true support at the ministry level would be the most difficult. While influencing policy-making at the national level is fairly straightforward, actual implementation of the policies is much more difficult to affect. CEAPRED mentioned that superficially all would support MUS. However, the likelihood of conflict over resource allocation remains high. The lack of sufficient political will at the central level to enforce policies such as those that would support MUS was brought up by several individuals. Follow-through generally only happens when a central-level official promises action while in a village.

POTENTIAL FOR SCALEUP OF PROJECT IMPLEMENTATION

Government Role—a "Home" for MUS?

While everyone interviewed agreed that MUS should be scaled up, there was certainly no agreement on how this should be accomplished. A great deal of discussion, particularly in the district workshops, revolved around whether there should be a "home" in the government for MUS, and if so, who was best suited to provide it. Most agreed that future sustainability was contingent on embedding MUS within government because of NGO and funding-source transience. Additionally, there was an overriding feeling that the government should provide water services to its citizens.

DoI vs. DoA Debate Several interviewees felt that either the DoI (specifically NITP) or the DoA should be the "home" for scaling up MUS. Even the two agencies themselves were undecided about the best course of action. An internal debate within the NITP raised the fact that the DoI had some small irrigation projects that were transferred to the DoA to complete, and that MUS projects could fit within this existing implementation structure.

However, they also recognized their superior technical manpower; the DoA does not have the appropriate technical staff as was echoed by the DADO in Kaski. Ultimately, NITP decided that no specific home was necessary and the MUS could be a coordinated effort between DoI and DoA.

Differing opinions were seen within the DoA as well. The Deputy Director General of the DoA Planning Division felt that the DoI should be the lead agency but coordinate closely with the DoA. Since the DoI and DoA have pre-existing joint committees at both central and local levels that meet once every trimester to discuss common issues and joint projects, he felt that MUS should be wrapped within this structure. On the other hand, the M&E Chief of DoA said that the DoA and DWSS should jointly run MUS. His logic was that the two departments already provide community water services, so they are more adept at working directly with VDCs. Further, the DoA provides support to farmer groups at the community level. This existing mechanism could be used to scale up MUS. The DWSS also has user groups at the community level, albeit for larger-scale projects. Although the DoA and DWSS have never had a joint project, he thought that if policy were created first to mandate coordination between the two departments, then it would come to fruition.

Even if one agency was recommended as the driver, most agreed that it would take a coordinated effort because of the nature of MUS. Winrock explained that on some levels the DoA structure is easier for NGOs to work with, allowing for greater NGO coordination as well. Additionally, DoA has a field office and staff in every district, while DoI does not have this kind of institutional infrastructure. Yet DoI has a great deal of resources to support irrigation work. A strategic partnership could be built where DoI provides funding and DoA gives technical support for projects. Unfortunately, this type of structure leaves out the drinking water component. CEAPRED recognized the need for stronger drinking water support and recommended that DoI lead the MUS effort but coordinate with NGOs, the Fund Board, and the Poverty Alleviation Fund (PAF)[3].

DDC Should Be "Home" Although the support of the line agencies as facilitators was considered important by most, having the "home" for MUS at the district level became the primary mechanism supported. Less surprising, it was also the consensus of those attending the district-level workshops that DDC lead the MUS effort. Both the DWSS-CBWSSP Project Manager and the Regional Agricultural Director at the Kaski LA workshop claimed that to ensure system sustainability, the DDC should be in charge. They also pointed out that setting MUS work within the purview of the DDCs fits well with the current decentralization effort in Nepal that was initiated after the 1990 uprising and opening up of the multiparty system. District line-agency offices were established in addition to the preexisting regional ones. The Ministry of Local Development also appointed Local Development Officers

to run the DDC and district budget, which was further formalized with the Local Self Governance Act of 1999.[4]

Perhaps the most strongly in favor of placing control of MUS with the DDC was the Deputy Director General of DoLIDAR[5] who sees the DDC as the focal point responsible for all rural development. He feels that the closer to the community the program operates, the better services it can deliver and that as the agency with oversight of small-scale rural projects, DoLIDAR was the key agency to push MUS forward. He felt that the main issue was not completing construction of projects, but making them sustainable in the long term. Sustainability could not occur without DDC ownership. This sentiment was repeated by many at the Kaski LA workshop.

Helvetas-Palpa thought that the VDC as well as the DDC should be in charge of MUS for each specific area because they deal directly with communities and have a small amount of resources. IWMI-Nepal agreed with Helvetas-Palpa but took it one step further: the central government should direct MUS work through policy and resource allocation, and the DDCs and VDCs should make MUS part of their development activities. Considering that several MUS systems built to date incorporated deteriorating DDC drinking water systems into the new structure, DDC should incorporate MUS into their water resource development work to prevent the need for future adjustments.

Attendees of the Kaski LA workshop broke out into groups and outlined the various roles that each stakeholder should have in future MUS system scaleup. The results of these discussions can be seen in Table 7.2. At the workshop, the discussion centered on the need for DDC and VDC to assume primary responsibility for MUS with GOs, NGOs and INGOs providing support.

Attendees of the Palpa LA workshop went one step further and designed a protocol for future MUS implementation and scaleup (Figure 7.4). They, too, saw the DDC as the lead umbrella organization that would respond to demand for MUS from the VDCs, pressure central government for adherent policy, and coordinate between line agencies for planning at the district level. NGOs and INGOs would facilitate the government operation, and the media would be responsible for awareness creation of MUS technologies and success stories. They did not, however, discuss the role of the communities themselves, as in Kaski. The roles of the various organizations they outlined at the workshop can be seen in Table 7.3. There is a good deal of overlap with the Kaski LA workshop suggestions, although the roles envisioned at the Palpa LA workshop were not as comprehensive.

Table 7.2: Role of various organizations developed at Kaski LA workshop

Government organizations	DDC/VDC[6]	Communities	NGOs/INGOs
• Technical backstopping • Policy formulation • Protocol for MUS implementation • Information dissemination • Program budgeting and planning • Supervision/ monitoring and evaluation • Coordination/ linkage between all three levels • Identification of potential areas • Exposure visits required for staff • Share about MUS projects with other countries through workshops, visits, seminars, international visits	• Facilitating—through annual planning workshop • Coordination with all stakeholders • Matching fund • Capacity building—should work as human resource development organization for VDC level	• Scheme ownership • Active participation • Unskilled labor • Acquisition of local materials • Express all water use needs to other stakeholders • Lobby DDC and VDC for MUS • Information sharing • Information during field visits • Farmer-to-farmer exposure visits • Leader farmers conduct trainings in their VDC • Management of the MUS systems including distribution rule agreement • Operation and maintenance of system	• Potential area/ community identification • Information dissemination • Resource identification • Financing • Technical expertise • Mobilize community • Facilitate market linkages and supply chain from input to end product • Operation and maintenance training • Organizational development • Monitor community progress

They proposed the following procedure (shown graphically in Figure 7.4):

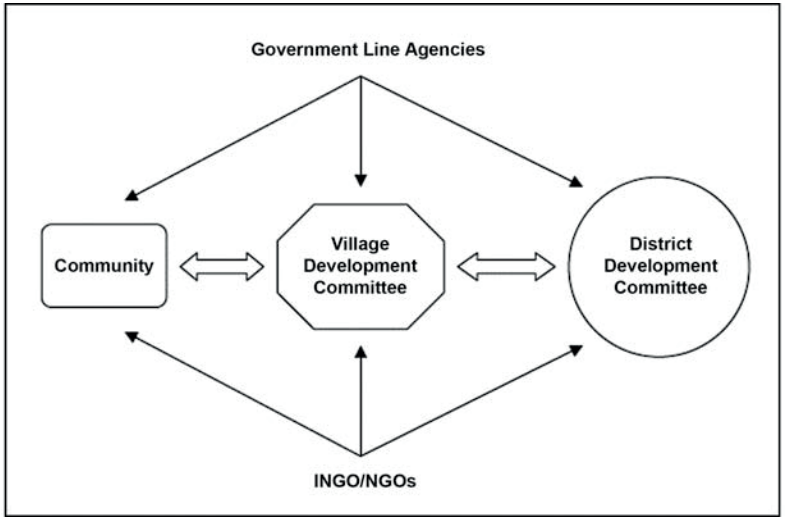
- Community approaches the VDC for MUS during the VDC planning session
- VDC allocates money for MUS and lobbies DDC for allocating matching funds
- DDC creates pressure to central-level line agencies for policy making to promote MUS and coordinate strong linkages between line agencies during the planning period. Line agencies included were the District Forest Office, Divisional Irrigation Office, DADO, and Women Development Office.[7]

Table 7.3: Role of various organizations developed at Palpa LA workshop

Government organizations	DDC/VDC	NGOs/INGOs
• Coordination between government offices • Capacity building for technical staff • Awareness creation for technology • Technical input provider • Policy formulation	• District-level coordination • Facilitator • Monitoring and evaluation of MUS • Documentation of water sources district-level developent activities	• Social mobilization • Awareness creation at community level • Exposure and information provider • Linkage development with lline agencies • Advocacy of technology • Coordination between • NGOs • Capacity building

No "Home" Necessary—Coordinated Effort Required Some saw the need for a coordinating committee instead of one lead agency or department. The Fund Board mentioned that different departments have different targets to meet according to their specific budgets, so unless coordination occurs at the ministry level, a holistic MUS approach would not move forward. Yet different opinions on who should be included in the coordinating committee emerged. NFIWUAN felt that the coordinating committee should consist of them, DoI, DADO, and IDE. This team would jointly be responsible for supervision, monitoring, and follow-up. He said that the government and IDE should provide the "hardware" portion (the technical backstopping) and NFIWUAN the "software" part (the social development and mobilization).

Figure 7.4 Scale-up protocol created in the Palpa LA Workshop



Courtesy of Kailash Sharma.

The NITP Coordinator thought that the coordinating team should include DoI, DoA, DoLIDAR[8], and the Department of Women Development. SAPPROS envisaged another type of coordination where a semi-governmental body would be created with funding from the government and independent donors and implementation done by INGOs, local NGOs, and communities.

Several others felt that NGOs (and specifically SIMI NGOs) should continue taking the lead on MUS for the foreseeable future and simply coordinate with line agencies and local NGOs (much like the current system of operation). World Vision believed that the international reach of INGOs would allow for information and technology transfer between countries. DADO thought that NGOs should lead but that DoI, DWSS, and DoA should incorporate MUS into their current piped water supply schemes.

NEWAH's vision of coordination was perhaps the most all-encompassing. Line agencies at the national level would incorporate MUS into policy. At the local level, communities would demand the VDCs and DDCs allocate funding for MUS. NGOs would advocate for incorporation of MUS into projects of other NGOs/INGOs and convince donors that MUS is a worthwhile technique.

Potential Funding Mechanisms

Most interviewees thought that NGO funding was temporary. Government resource allocation for MUS is the only economically sustainable way to scale up MUS. Helvetas-Palpa felt that communities should build their own

systems with supplementary support from the VDC and DDC. The DDC is currently responsible for funding irrigation projects of 25 ha or less in the hills and 200 ha or less in the Terai and drinking water projects for populations of less than 1,000. The DWSS-CBWSSP suggested the creation of an additional fund within the DDC into which NGOs, PAF, and other donors could contribute. The DDC would then be responsible for all project management. SAPPROS, on the other hand, felt that a separate semigovernmental body should be created with its own fund for MUS.

TACTICS FOR SCALEUP OF INFORMATION DISSEMINATION

For major upscaling of MUS, increased awareness at all levels was considered a critical component. In order to accomplish this, promotional materials should target government organizations, nongovernment organizations, and beneficiaries. To raise VDC, DDC, and community awareness, outreach efforts at the district level would be necessary. Other information-dissemination methods suggested were:

- Publicity materials—newsletter, brochure—placed in the markets
- Radio—seen as the most potent outreach medium in Nepal because of its affordability
- TV and film
- DADO has a national network through which they can disseminate information
- Build one pilot project in every district and have exposure visits
- More district workshops and seminars—have the beneficiaries with MUS experience tell about it
- DDCs sometimes organize development forums to share best practices
- Helvetas sometimes organizes review meetings for sharing of best practices
- Could expand the World Vision farmer forum concept to other districts
- Have an orientation on MUS in each DDC and hand out booklets
- E-mail updates to network of partners on progress of MUS

OUTCOMES

On the whole, there is currently more organizational buy-in at the local level than at the national level, at least in the districts where SIMI operates. Through the search for matching funds and partners, organizations become involved in implementation of MUS projects. This involvement concretizes their conceptualization of MUS, shows them its benefits firsthand, and increases their interest in becoming MUS advocates. What could be occurring is the phenom-

enon of cognitive dissonance which describes the effect of people becoming so invested in a project and their contribution to it that they become less inclined to criticize the project and more inclined to speak favorably of it.[9] However, even those who are not involved in implementation, but have visited MUS sites, have little negative feedback.

BUY-IN AT THE COMMUNITY LEVEL

In meetings with both SM/CM and AT/IT/MS/DM SIMI staff, they claimed that their major hurdle is greater demand for MUS systems than SIMI can handle. Most partners (World Vision, CEAPRED, SAPPROS, SORUP, DADO, NITP, etc.) reported that since becoming involved in the building of MUS projects, they have received continual requests from neighboring communities. The NITP Coordinator gave an example of the Lele project in Lalitpur District that they are contributing funding to. Three to four communities in the vicinity of Lele have already requested MUS. And they are getting requests from other districts as well—too many to count. The NITP Coordinator had noticed that in districts where NITP contributed to building a MUS project, there were always requests for additional MUS funds from district staff the following year. This shows that once systems are built in a district, demand for MUS is generated. And, community-level buy-in is not a problem for future MUS scaleup.

In fact, community buy-in is an essential component of MUS projects. Communities are willing to contribute substantial resources toward MUS systems. Not only do they provide labor and local materials as a group, but each household purchases a microirrigation system with its own money. In 44 of the 81 MUS schemes built to date, the communities have actually contributed cash to their systems as well. As shown in Figure 7.5, communities have contributed 16 percent of the total cash spent on all MUS schemes through 2008.[10] Purchases of microirrigation kits are considered separate from and in addition to project costs. And project costs shown here do not include IDE-Nepal/WI overhead costs. See chapter 2 for more information on the average project costs including overhead.

BUY-IN AT THE DISTRICT LEVEL

Funding Support

Because of the practical advocacy conducted to secure financial partnerships, the major outcome of the LA was funding support. Over the period of MUS-system construction to date (2003–2008), government funding has continually increased. This shows the success of the matching-fund effort and the perception that MUS is worth supporting. The proportion of cash contribution from each stakeholder throughout the five-year period is shown in Figure 7.5. Total government contribution of schemes to date is 22 percent of all cash costs. The major government organizations that have contributed are

DoI/NITP and DoA (through DADO). DWSS and the District Soil Conservation Office have also contributed to a few projects. Funding from the local government structures (VDC and DDC) comprise the remaining portion of government support. Other INGOs (World Vision, CARE Nepal, and Helvetas-LIPS), local NGOs (local/regional clubs and schools), and the communities themselves have all contributed cash for MUS projects. The communities also were responsible for contributing all unskilled labor and local materials that went into project construction. When noncash costs are factored in, community contribution totals 47 percent of all project costs as shown in Table 7.4 and Figure 7.6.

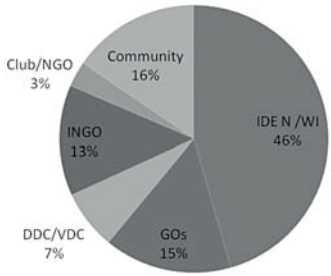
Table 7.4: Percentage overall contribution by various stakeholders to the total cost of all IDE-Nepal/WI MUS schemes built, 2003–2008

Organization		Total amount (NPR)	Total amount (US$)	Percent
NGO's	IDE-N/WI	4,550,244	65,003	28%
	INGO	1,332,676	19,038	8%
	Local NGO	308,546	4,408	2%
Government	Government Organizations	1,537,927	21,970	10%
	DDC/VDC	719,040	10,272	4%
	Subtotal	2,256,967	32,242	14%
Community	Cash	1,539,581	21,994	10%
	Non Cash	6,216,037	88,801	38%
	Subtotal	7,755,618	110,795	48%
Total		16,204,050	231,486	100%

Note: Noncash contributions are all provided by the community and include unskilled labor and local materials like sand, stone, and gravel. Noncash items are calculated on local prices and labor rates.
Source: IDE/WI scheme data

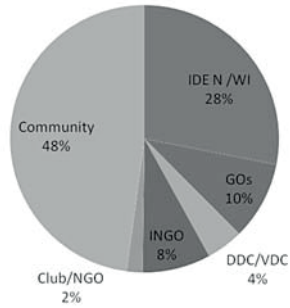
Perhaps the most positive outcome of the LA in Nepal has been the inclusion of MUS in the DDC guidelines for VDC funds. Through activity on the SIMI advisory committee, the Ministry for Local Development has been involved in MUS development over the past four years. Due to the positive response to the approach, the Ministry has recently included MUS in their fund allocation guidelines. These guidelines comprise a list of what the central gov-

Figure 7.5 Percentage cash contribution by various stakeholders to the total cash cost of all WI/IDE-N MUS schemes built from 2003-2008



Note: Community cash costs do not include purchase of microirrigation kits. Those are considered separate purchases from the MUS system. IDE-N/WI costs do not include overhead costs.
Source: IDE/WI scheme data

Figure 7.6 Percentage contribution (cash and non-cash) by various stakeholders to the total cost of all IDE-Nepal/WI MUS schemes built from 2003-2008



Note: Community cash costs do not include purchase of microirrigation kits. Those are considered separate purchases from the MUS system. IDE-N/WI costs do not include overhead costs.
Source: IDE/WI scheme data

ernment considers "useful" development work for the DDC to undertake. In other words, MUS is now an official development activity in Nepal. DDCs receive federal funding for development activities. Through the explicit addition of MUS in the guidelines, the DDCs are now authorized to provide VDCs with funds for MUS projects. This action of the Ministry for Local Development will allow communities to leverage local funds for MUS cash costs. It also shows that LA and MUS-implementation activities in Nepal have generated enough awareness about MUS that the approach is beginning to be inserted in policies and procedures.

Promises Given at Workshops

LA workshops were incredibly successful at attaining public declarations of support for MUS. At the Kaski LA workshop, the Regional Agriculture Director, who is responsible for 16 districts, said he would suggest to all his district-level staff to incorporate MUS wherever possible in their work. He promised to request that his project staff in each district meet with SIMI and other NGOs to coordinate MUS implementation. The Local Development Officer (the head of the DDC) declared at the Kaski LA workshop that he would organize a water resource development workshop for the district. He requested organizations coordinate with the DDC on MUS work during their planning period. NITP also announced that they are increasing their MUS-project area coverage and arranging for more publicity about MUS throughout Nepal.

The Palpa LA workshop was even more successful for garnering funding pledges and support. At the workshop, the Western Region Subdivisional Irrigation Office Chief Divisional Engineer said that after the workshop he

was ready to allocate NPR 50,000 ($714) per scheme for three MUS schemes in Palpa over the coming year. He mentioned that a major benefit of the workshop timing was that it coincided with his office's planning period, so he had more flexibility in allocating resources for MUS. This promise was a major step forward: it was the first time that a DoI divisional office promised financial assistance for MUS. Prior, all DoI funding had come through NITP at the national level. The Palpa Local Development Officer was unable to attend the workshop, despite previously juggling his schedule in order to make it. However, he assured his support for MUS in the future—through financing, policy/regulation, water source documentation, etc.

The second major development at the Palpa LA workshop was the increased interest of the Ministry of Forest and Soil Conservation. Although a couple of projects in Surkhet and Syangja had received funding from their District Soil Conservation Offices, the one in Palpa had not yet contributed to MUS. The Chief District Soil Conservation Officer of Palpa stated at the workshop that he would try to incorporate MUS into their future projects. Not only does their policy support tank construction, but their office has provisions for making them. The construction of tanks could be a perfect fit for their contribution toward future MUS projects. Additionally, the Chief District Forest Officer claimed that he would certify any future MUS projects that required use of water sources on land that belonged to the Forest Department. He said that he saw the potential synergy between his department and MUS because communities would be more likely to protect their forests if they depended on and managed the water resources in them.

Lastly, the Palpa LA workshop renewed the interest of a previous MUS partner, Helvetas-LIPS. Although they had partnered on a few of the beginning MUS projects, a phase of budget planning had prevented them from contributing funding in recent years. After the workshop, they expressed excitement about rejuvenating the MUS partnership with SIMI.

The Joint National/Lalitpur District workshop held on July 2, 2007, also resulted in important steps forward for MUS. This workshop was successful in creating new partnerships of interested organizations including Water Aid, Practical Action, Capacity Building for Gender Equality, Empowerment of Women (a project of the Department of Women Development), and Manohari Development Institute.[11] After the workshop, Manohari Development Institute decided to build 60 MUS systems in Makwanpur District with technical support from SIMI. The Department of Women Development stated their interest in investing in MUS systems from their infrastructure budget. Water Aid requested to see MUS design layouts and discussed future joint implementation with SIMI staff. DoLIDAR requested a one-day MUS training for their technical staff. DWSS-CBWSSP and the Federation of Water and Sanitation Association of Nepal both indicated interest in future collaboration. SIMI is planning bilateral meetings with each of these organizations.

Partner Organizations Implementing Their Own MUS Projects

A few partner organizations also mentioned that they were constructing their own MUS projects. Two NGO partners said that they already used the MUS approach, although when explained, the projects turned out to be more domestic-plus than MUS-by-design (see Van Koppen et al. 2006 for discussion on these terms). SAPPROS has been working with communities on drinking water systems for the past ten years and provide additional water for irrigation in their systems. They said that involvement in the LA has raised their awareness of the possibilities of MUS-by-design. They are now linking microhydro systems with irrigation in two districts they work in. NEWAH designs their drinking water systems to include livestock (45 liters/capita/day for both domestic use and livestock) plus an additional 20 percent delivery for a 20-year projected population. They encourage the communities they work with to use this 20 percent extra plus domestic wastewater for kitchen gardens. NEWAH mentioned that the communities they work in always ask for irrigation pipes in addition to their drinking water scheme. They do not provide the community with extra pipes to use system water for irrigation but encourage them to purchase and install the pipes on their own. Since LA involvement, however, NEWAH is interested in MUS-by-design. If IDE incorporates a stronger sanitation component, they wish to partner on future MUS systems.

Government agencies have also built a few of their own MUS schemes with SIMI providing technical support. The DADO in Tanahun District has constructed their own projects with IDE technical support. NITP has built projects in Palpa, Surkhet, and Kavre districts. And although they have not implemented their own projects, one of IDE's local partners in Doti District wrote an article about MUS that was featured in the journal *Society of Public Health Engineers* in March 2007.

BUY-IN AT THE NATIONAL LEVEL

NITP Projects Funded by the Asian Development Bank

When the Asian Development Bank (ADB) was planning their current loan project, they wanted to encourage microirrigation work within the DoI. Although the ADB Nepal Resident Mission had attempted to work on microirrigation before, they had been largely unsuccessful because of the political conflict. However, through an ADB-affiliated planning consultant, they heard that IDE had been able to work on microirrigation during conflict periods. Subsequently, the ADB South Asia Regional Director approached the Head Engineer of IDE to discuss IDE's work. They requested IDE to write a joint proposal with DoI for microirrigation. IDE incorporated MUS in the proposal. Once the project was accepted, the Head Engineer of IDE was offered the Technical Assistance Team Leader position for the project by ADB. While this left a vacuum within IDE on LA efforts during the transition period to a

new Head Engineer, it propelled MUS forward within NITP and the ADB and established a project specifically designed to create a plan for scaleup.

Livelihoods Enhancement through Microirrigation (LEMI) was a one-and-a-half-year $450,000 pilot project with DoI as the executing agency. The NITP Coordinator was the Technical Assistance Team Leader for the project. Through the LEMI project, the NITP made a comprehensive policy and "implementation modality" for MUS and microirrigation projects. A broad microirrigation project was pilot tested in each of the five districts through an NGO consortium. IDE was the team leader with Winrock, SAPPROS, and independent consultants forming the remainder of the implementation team. As part of these five larger projects, six MUS-by-design projects were built in four of the districts. The remaining projects sold microirrigation kits to farmers who had water availability above 100 liters per day for kit operation. These farmers are using the existing domestic systems as a water source. Therefore, they are de facto MUS projects, but not MUS-by-design.

LEMI management involved the use of Sub-project Management Units for each of the five districts. The Sub-project Management Unit was chaired by the irrigation chief of that district with a representative from the DoA; DWSS; Department of Women, Children, and Social Welfare; DoLIDAR; the Nepal Agricultural Research Council; DDC; and one local NGO. A Sub-project Management Unit with the same structure at the central level oversaw the whole project. This structure was essential to the sharing of the MUS approach across the relevant departments at the central level. The NITP coordinator claimed that coordination at the central level had been smooth thus far. However, the district-level Sub-management Units functioned less effectively, largely due to a lack of active participation by representatives from other line agencies. Conversely, the LEMI Team Leader claimed that the district-level representatives for the Department of Women, Children, and Social Welfare were much more actively involved than the central-level representative. This department played an important role in the Sub-project Management Unit because they assist a large number of district women's groups involved in development activities such as savings and credit, income generation, vegetable production, etc. Realizing the importance of women's involvement in water resource development projects, these groups are an existing structure that LEMI is tapping into for implementation.

Farmers involved in the de facto MUS portion of the LEMI project complained that they faced dry-season water shortage and did not have an adequate supply for microirrigation. Therefore, one of the overall recommendations that emerged from LEMI was the necessity of MUS for upscaling microirrigation. And, according to the NITP coordinator, NITP plans to scale up MUS, starting with 50 new MUS systems in Hetauda in Makwanpur District (for which IDE is providing technical assistance). Current NITP funding of MUS projects is at 40 percent contribution. However, they are willing to fund up to 75 percent of the cost of projects in the future with 25 percent contribution from the community.

NITP Work in General—Shift in DoI Thinking

The greatest support for MUS at the central level has come from NITP. At the beginning of the MUS project, DoI would only providing funding for MUS if they were called "microirrigation schemes". Now, they are much more open about supporting MUS. For example, recently the DoI held an Irrigation Day to discuss irrigation issues at the national level and invited the Water Resource Ministry, Water Energy Commission Secretariat, and other high level officials of various departments. The NITP Coordinator was requested to give a presentation on the Lele MUS scheme that was very well received.

The internal shift within the DoI has been substantial. The NITP Coordinator described the situation a few years back when NITP was established: almost the entire department resisted smaller-scale projects and even at the field level NITP had difficulty motivating staff to work on small projects. But, in only a few years that mindset has drastically changed: now only about a quarter of DoI staff still believe that small-scale projects are not worth their time. DoI engineers and overseers are motivated to work on small-scale projects because they see the direct benefits of their work for communities. With only a small amount of financial resources and a short time frame (a few months) they can receive a huge return on their investment. They are receiving such positive feedback from communities, NGO partners, national-level GOs and international visitors that it not only improves their external relationships, but also reflects positively on them and their work. Similarly, regional directors within DoI were initially negative about NITP and refused to implement small projects, but are starting to comment that small projects have some benefit. Although many still perceive a greater value in large projects, they now see the worth in small projects as well.

International Aid Agency Projects

In 2007 the Finish International Development Agency began a development project called "Rural Village Water Resource Management Project" (RVWRMP) implemented through joint collaboration of the government of Nepal and Finland with a major MUS component. Its focus is on working through the local government bodies (DDC and VDC) in far western and mid-western districts (see Plate 1) to encompass all possibilities for water resource management. The project is in the preliminary phase, preparing Water Use Master Plans. The RVWRMP MUS work is incorporating picohydro or microhydro power in addition to domestic and microirrigation uses to help broaden the conceptualization of MUS in Nepal. The funding of the project breaks down according to Table 7.5. IDE-Nepal has signed a Memorandum of Understanding to be the livelihoods advisor to these MUS projects.

Table 7.5: Funding contributions for RVWRMP project

Organization		Percent Contribution of RVWRMP Project
Government of Finland		82.6
Central government of Nepal		7.0
DDC		1.0
VDC		1.0
	Cash	0.2
Community	Non Cash	8.2
Total		8.4

Source: IDE-Nepal RVWRMP project data.

The Japan International Cooperation Agency is also planning to fund some MUS projects in Nepal. They have signed a Memorandum of Understanding with IDE to implement these MUS systems within the SIMI project area of Lalitpur District.

Poverty Alleviation Fund (PAF)

The PAF has shown some interest in MUS. As a semi-autonomous government body, they have substantial resources. IDE has given a presentation to them about MUS and is developing a Memorandum of Understanding at the central level for training of district. These district advisors will in turn train district NGOs.

World Bank Interest

The Fund Board (discussed in chapter 1) is a World Bank supported program that provides rural water supply and sanitation services. While the Fund Board is interested in microirrigation, it has not yet fully accepted the MUS concept. A few years back the Fund Board was interested in incorporating microirrigation into their water supply schemes. They heard about the success of MUS pilot projects and proposed five joint pilot MUS projects in Palpa where they would supply the drinking water component and IDE would supply the irrigation component. However, when the Fund Board brought this proposal to the World Bank, concerns were expressed that domestic water priority would be subverted for irrigation, and the proposal was stalled. Recent conversations have led to renewed interest, particularly in incorporating MUS as part of an upcoming $50 million irrigation and water management project for western Nepal. Bilateral conversations are ongoing.

CONCLUSIONS AND LESSONS

There are many important lessons to be gleaned from the Nepal LA experience. Some are specific to the situation in Nepal, but have implications for the propagation of MUS worldwide.

FULFILLING COMMUNITY NEEDS

One simple, important lesson from MUS in Nepal is that a scheme or technology will fail if it cannot meet community needs. Yet, if their needs are met, community members become advocates for the concept. This became apparent during a conversation with a WUC chairwoman at the Palpa LA workshop. She told the story of her village's history with SIMI and MUS. At first, IDE had worked with the community to purchase and install microirrigation systems for vegetable production without developing the water source, as was the original IDE design. When the IDE project with the village phased out, they stopped producing vegetables or using their microirrigation kits because they had a lack of sufficient water. Instead, they were using the drip header tanks to reserve water for toilet use. They eventually went back to SIMI after hearing of their MUS work, and requested that SIMI help them with a MUS system. They worked out an agreement with a nearby community to allow use of a portion of their water supply, and SIMI built a MUS scheme in their village. Now they are not only regularly using the MUS system and microirrigation kits, but are also promoting MUS to other communities in the district. And, because of their efforts, two more systems have been demanded from neighboring communities. This shows that although SIMI was addressing peripheral needs at the onset, the true need for greater water supply was not being met. Thus, microirrigation efforts were not as successful as anticipated. However, once the full needs of the community were met, they became advocates for SIMI, MUS, and microirrigation technology.

RAISING COMMUNITY CAPACITY

Although improving the community's technical skills is a stated objective of MUS projects, their capacity is being raised in other aspects as well. According to IWMI-Nepal, MUS has become a major medium for social integration, networking and the creation of relationships for water sharing. And, as the community members begin making more income through vegetable production, they often pull money together for other development work in their village. Furthermore, by requiring formal source use rights, communities must negotiate with their neighbors and determine water use and allocation at a crucial time when water is becoming a more sought-after resource. By having all members part of the allocation process, disputes over water within the

community are diminished. As DADO-Kaski put it, "MUS helps to maintain the social harmony."

Through the search for matching funds communities are learning to advocate for themselves to other NGOs and GOs. This not only helps communities satisfy all of their water resource and other development needs, but inadvertently leads to MUS dissemination and information transfer. According to Helvetas—Palpa, MUS communities are now demanding more services. And, as the SIMI Team Leader noted, the marketing committees that were set up as part of the SIMI projects have been another lobbying tool for MUS.

SEEING IS BELIEVING

Perhaps the single most important lesson from the MUS LA in Nepal is that "seeing is believing." Those who maintain reservations about MUS, like the Fund Board, have never seen a MUS system; those who have seen MUS systems, like national-level NITP and DoA staff, are already advocates of the approach and interested in working toward scaleup. As the NITP Coordinator said, "When people go to the projects they are impressed, so it makes NITP look good." Even the DoI Director General was very impressed after seeing a few MUS projects, making a request for increased NITP funding easier. It follows that constructing pilot MUS systems prior to an attempt to spread the concept is important. It may also be one explanation for stronger district-level buy-in.

To this end, the importance of exposure visits cannot be understated. For example, the DADO officer said that many visitors request field visits to MUS projects. As a MUS partner, he goes with them. He said that each time he attends a field visit he gets a greater understanding of and interest in MUS. All interviewees mentioned the need to have more of them for MUS scaleup. Some even encouraged the construction of pilot projects in every district across the country to provide an example for the DDCs and VDCs. And, with most stakeholders pointing towards the DDC as the vehicle for scaleup, exposure visits take on even more relevance. Furthermore, exposure visits are important for community interest. The NITP Coordinator stated that without a physical system, it is difficult to explain to a community how the technology can benefit them, but once there is one scheme to show them, it becomes much easier to establish more projects in the area.

ESSENTIAL LINKAGES

SIMI

Attaching MUS to SIMI implementation (which was later followed by implementation through both the Ujyalo and BDS Maps projects in a similar fashion) was fundamental to the success of MUS in Nepal. SIMI provided a larger project framework that made the essential linkages with microirrigation technology, vegetable production, and connection to markets. These program

linkages led to system pay-back through vegetable production and the ability of households to afford operation and maintenance funds. It also was crucial in raising the status of women in these communities (reference chapters 3 and 5), a major component of successful systems.

More specifically to the LA, the SIMI Advisory Board was vital to national-level buy-in. It is officially recognized with the government and has representation from the Ministry of Agriculture and Cooperatives; Ministry of Finance; Ministry of Women, Children & Social Welfare; Ministry of Local Development (within which DoLIDAR is housed); DoA; DoI—NITP; National Agriculture Research Council; Agro Enterprise Centre; SAPPROS; CEAPRED; IDE-Nepal and Winrock International. The NITP Coordinator and Director General of the DoA Planning Division are both members of the board, increasing their interest in the program and keeping them intricately involved in project progression. Minutes from the board meetings form guidelines for district action. Therefore, if something is decided at a meeting, it becomes a directive that district line agencies must follow, giving weight to board meetings and discussions.

NITP Movement

While the use of SIMI as a MUS vehicle was essential to its success, perhaps even more important for the LA was the synchronicity with the nonconventional irrigation technology movement, the beginnings of NITP. The onset of the MUS project was just after the initiation of NITP, a small division made up of only a few forward thinking individuals within DoI. DoI receives the majority of its funding from ADB and the World Bank. Since both institutions have been ridiculed internationally in the past several years for funding wasteful large projects that do not help the most impoverished, they put pressure on DoI leadership to include smaller projects in its portfolio. Although the leadership of DoI preferred large-scale projects, they created NITP to placate the donors. This initially left NITP in a difficult position.

The concept of nonconventional irrigation was not popular with most of the Department so NITP searched for a way to prove its worth and garner respect from the remainder of the Department. The fledgling division expressed interest in partnering with IDE on microirrigation technology and as the relationship developed, MUS came into view. NITP was handicapped by internal policy: working on schemes with construction costs over NPR 100,000 ($1,429) required a complicated and time-consuming contract awarding process. However, NITP had free reign to provide up to that amount of funding to a project. MUS was a perfect fit because it addressed the problem of water scarcity, provided surplus water for irrigation, was linked with microirrigation technologies, and had a low investment with quick rewards.

Most NITP staff were general DoI staff assigned to work specifically on NITP. Most were skeptical of NITP, leading to a lack of support within NITP

for its own mandate. Yet, as the NITP engineers and other staff began to work on MUS, it had a surprising transformative effect on them. The NITP Coordinator described how MUS raised staff morale: whereas on large projects the engineers rarely saw the direct impacts of their projects, MUS was tangible, quick to construct, and brought positive results within a few months. As momentum for MUS grew within the NITP staff, word slowly spread throughout the remainder of the Department, ultimately soliciting the positive responses mentioned above.

IMPORTANCE OF CHAMPIONS AT ALL LEVELS

Even though MUS benefited from the connection with the NITP movement, it would not have moved forward as a concept without the work of dedicated champions at all levels. There are examples at each level of individuals who were largely responsible for connecting partners, advocating for communities, and believing in the ability of MUS to achieve their goals. In NITP, both the NITP Coordinator and an engineer passionate about small-scale irrigation technologies were drivers of microirrigation and MUS. The DoA M&E Chief has been largely responsible for the sharing of the MUS approach throughout the DoA. World Vision gave credit to the Kaski DADO for recommending SIMI technologies to them for their successful MUS project with landless people in Patneri VDC. They said that he pushes them to try new technologies, and shares new ideas from other districts, which is how they came to know about SIMI and MUS. Similarly in Lalitpur, the Lele Social Mobilizer explained how the DADO was the connection between IDE and the Lele community. The community had come to him for help as a poor, lower caste community with no previous development activity in their village. He subsequently advocated for them to work with IDE on a MUS project. As explained in detail in chapter 3, it was the work of one leader farmer that shared information about the MUS concept and SIMI's work between villages in Palpa District. He successfully advocated for projects for both his own community and a neighboring one.

LACK OF STRATEGIC APPROACH

Despite many successes of the LA and of MUS in general in Nepal, the LA approach was not perfect. Although IDE was successful in pulling together partners at the various levels and generating wide interest in MUS, they lacked an overall strategic approach to the LA. The lack of strategy for the LA, particularly at the national level, may have decreased the overall success of the effort. For example, despite several overtures to the DWSS to join the LA, they were perpetually resistant to involvement. Only recently has it come to light that the DWSS is unable to work with IDE on MUS projects. An internal policy mandates that the Department cannot work on projects serving a population under 1,000. Since all MUS projects to date are smaller, DWSS

was not the best fit for MUS partnership. There are other departments within the government that are initially less obvious but do work on small-scale drinking water projects in rural areas and would have been better suited for the LA from the onset. For example, the Community Based Water Supply and Sanitation Project (CBWSSP) is an ADB funded project to be completed by 2010 that is affiliated with the DWSS but actually focuses on small communities. And, this CBWSSP has even handed over some of their schemes to DoLIDAR within the Ministry of Local Development. DoLIDAR's focus is small-scale rural infrastructure projects, including drinking water . Although the Ministry of Local Development, within which DoLIDAR falls, is a member of SIMI's Advisory Board, a direct invitation to DoLIDAR into the LA would have been a useful connection. Relationships with these organizations are now beginning.

Partner Follow-Up

Another deficiency of the LA was sufficient follow-up with organizations that had attended national-level workshops. The interval between workshops was also too long, failing to capture the momentum generated at each meeting. Although relationships with Kathmandu University and NFIWUAN were nurtured, other partners that were not directly working on MUS projects fell by the wayside between workshops. This led to lack of actionable interest from these organizations and gaps in knowledge about what was actually happening with MUS. For example, NEWAH was at the first LA workshop, and yet during their interview was unaware that MUS was now being done in government projects and with government support. This shows the dearth of information flow with some of the LA partners. Particularly considering the feeling of some partners that the focus on the domestic water component was insufficient, relationships with partners like NEWAH could have been strengthened.

Failure of NFIWUAN as Lead

Although SIMI worked out an agreement after the second National MUS LA Meeting for NFIWUAN to take the lead on the LA, difficulties arose. SIMI did not have enough resources for NFIWUAN's MUS work, so NFIWAUN needed to raise funds. According to SIMI staff, they had previously indicated their ability to raise matching funds but were unable to follow through. SIMI suggested working with them to prepare a budget for another LA event, but a concrete proposal was never created. Additionally, as SIMI worked with other partners, staff became aware of rumors that NFIWUAN was affiliated with a particular political party, affecting their ability to effectively coordinate multiple organizations.

When interviewed, NFIWUAN individuals expressed the opposite of what SIMI staff had relayed. They indicated that it was SIMI staff that had lagged in communicating with them. Considering that both parties felt that it was the other who had shirked responsibility, a communication gap seems the

likely explanation. But more importantly, it shows the importance of having funding to back any concept promotion or project implementation. While SIMI had good experience with organizations providing partial support for projects, it had maintained the lead in project implementation. It is very difficult to request an organization to take the lead on projects without providing funds with which to do so. On the flip side, part of SIMI's experience with NFIWUAN was based on the nature of the organization itself and the hesitance of other organizations to work with one that was deemed politically biased. SIMI staff is currently working to resurrect this relationship. NFIWUAN has assured SIMI of their neutrality and is slowly rebuilding the organizational relationship. They assisted in coordinating the Joint National/Lalitpur District workshop held on July 2, 2007 and have since expressed interest in renewing their fundamental role in the LA.

Over time, SIMI staff has also come to realize that MUS systems resemble domestic water systems much more closely than irrigation canals. Therefore, FEDWASUN may have been a better LA coordinator than previously thought. Not only is FEDWASUN enthusiastic about MUS, they have been active participants in meetings and exposure visits. Ultimately, SIMI staff has realized that both NFIWUAN and FEDWASUN are necessary partners for MUS.

PERVASIVENESS OF "BIGGER IS BETTER" CONCEPT WITHIN GOVERNMENT

Despite promising reactions from national-level government officials, there is still a large-scale project orientation within the government. IWMI-Nepal mentioned feedback at workshops from government officials claiming that MUS projects have too small of an impact. The Technical Unit Chief of SAPPROS argued this was simply lack of exposure to the idea. He said that twenty years ago he hesitated to believe in microsystems himself, but when he saw the developments in microirrigation technology, he recognized that it was time for Nepal to change. Those within DoI and DoA are predominantly interested in building big systems and are skeptical that a small amount of water can provide enough for sufficient irrigation. IWMI-Nepal elaborated by saying that central government policies do not specifically address small-scale schemes. Instead, officials at the national and even some at the district level consider microlevel projects to be the purview of local institutions. Central government attention is just beginning to enlarge to include small-scale technologies, so linkages between departments are nascent. The 2003 Irrigation Act does begin the process of small-scale irrigation technology integration, but MUS is not yet a part of the policy dialogue.

Similarly to DoI, DWSS maintains a large-scale project orientation, even within the CBWSSP, which is supposed to work on small-scale projects. This became evident during the CBWSSP interview. The interview was largely conducted with the Project Manager but he called two of his top engineers in for

part of the meeting. While the author was speaking with the Project Manager in English, another SIMI staff member was speaking to the two engineers in Nepali. The Project Manager was very positive about MUS and stated that it would "uplift their [rural communities'] economic condition, personal hygiene and health" and "definitely have a good impact." At the same time, the engineers stated that MUS was too small and they only desired to work on large projects. This could have been due to the fact that like in NITP, CBWSSP staff was selected from the general pool of DWSS staff, bringing their large-scale project preference with them despite CBWSSP's mandate. Or, it could be that the Project Manager has learned the requisite response to gain favor with international visitors and does not really support small-scale projects. Regardless of the reason, the engineers' response shows the substantial room for sharing the benefits of small-scale water resource development projects with those in the Nepal government.

Furthermore, even if the government departments are just beginning to shift, the fact that they have supported large-scale projects for so long has led NGOs and other partners to doubt whether their support of small-scale projects is genuine. Most partners have the conception that these departments are still largely uninterested in small projects.

DOMESTIC-PLUS AND IRRIGATION-PLUS

As might be expected, those irrigation practitioners are much more likely to advocate for domestic plus systems than irrigation plus ones (although DADO is an exception). An NITP engineer suggested that in rural areas where spring water is already used for all purposes, e implementers of domestic schemes should support additional uses. In essence he was advocating a domestic plus type of system. Several others stated that as long as a source had enough water, domestic water systems should be extended to include irrigation. One exception to this was the representative from DADO-Kaski who felt that it should go both ways—all GOs working on providing irrigation water should also provide drinking water and that all GOs working on providing drinking water should also provide irrigation water. During the Kaski LA workshop, his regional DoA supervisor questioned him on this and said that DoA should not be responsible for providing drinking water. The DADO-Kaski responded that the communities would end up using the water for both purposes anyway, so why not support the irrigation component of MUS projects?

On the other hand, domestic water practitioners were not nearly as likely to advocate for either domestic or irrigation plus. They were more comfortable with the traditional sectoral approach. Stated reasons for this skepticism of MUS included worry that irrigators would take too much water causing domestic supply to suffer and questions regarding the quality of drinking water provision.

GARNERING INCREASED SUPPORT FOR SCALEUP

Importance of Getting Funders on Board

During the Fund Board and CBWSSP interviews, it became evident that they rely heavily on the opinions of their funders—the ADB and World Bank—to guide them. The Fund Board had initially been very receptive to discussions about partnering on MUS and had started creating a plan for joint pilot projects. However, when they relayed the idea to their World Bank funders, reservations were expressed and the plan was delayed. They were largely worried about ensuring domestic supply: if domestic use was integrated with productive use, villagers could increase their production to the point where domestic water use would suffer. The Fund Board's mid-term evaluation with the World Bank is approaching. They are planning to readdress the issue and potentially visit MUS field sites. Similarly, CBWSSP expressed the necessity of achieving ADB's support before they could participate in MUS projects. DoLIDAR, while not mentioning particular funding support, did mention it as a constraint on flexibility in operations. Due to consistent funding constraints, the government will activate a particular project model if a funder comes to them with money to back it. Unfortunately, they will accept this funding regardless of whether they actually think it is the best course of action for the country. The strings attached to specific projects require government officials to accept projects in isolation. This makes coordination across government bodies more difficult. NEWAH also mentioned the boundaries placed on the organization and projects and the need for donor support to try new things. As NEWAH said, "if the donor doesn't open the gate, the implementer can't do it."

> *"If the donor doesn't open the gate, the implementer can't do it."*—NEWAH Manager, Technical Development Division

Greater Emphasis on Drinking Water and Sanitation

Participants of both district-level LA workshops expressed the feeling that the irrigation component was superseding the domestic water component of MUS project implementation. While this was in part due to IDE's irrigation technology focus, it might also have been due to the different levels of support coming from DoI and DoA versus DWSS and the Fund Board. However, it became apparent through the LA workshops and personal interviews that the participation of more domestic water focused organizations is crucial for scaleup. And, a great deal of opportunity exists to increase involvement of organizations involved in domestic water and sanitation work. For example, NEWAH mentioned that they were interested in working with IDE on MUS. However, placing a greater priority on the sanitation component would be necessary to secure their participation.

Workshops Key Promotional Tool

In talking with partners and attending district-level workshops, the importance of the workshops for conceptual sharing, creating new partnerships, and securing future funding became clear. All interviewees ranked workshops as the second most important tool for MUS upscaling (with exposure visits being foremost). As described above, workshops were essential for acquiring and sometimes even increasing previously promised matching fund contributions at the district level. For example, after the Regional Director of the DoA attended the first National MUS LA Workshop, he directed DADO-Kaski to support several schemes for the following year. In another example, the Machhapuchre Development Organization was planning to provide funding support of NPR 5,000 ($71) for a MUS project prior to the Kaski LA workshop, but after the workshop, they increased their funding support to NPR 30,000 ($428). Discussing the concept of MUS with other organizations and community groups created momentum for the approach and increased the likelihood of participation of each partner.

Link with Farmers' Forum

While discussing with World Vision, they suggested using their existing farmers' forum as a tool for scaleup in the district. Although there is only one farmers' forum now, this could be an excellent way to upscale MUS information dissemination. The possibility of establishing farmer's forums in each district would institutionalize the LA at the district level and foster communication between communities, VDCs, DDCs, district line agencies, and NGOs.

Other Suggestions

There were several other suggestions at the Kaski LA workshop on ways that each stakeholder could improve MUS operations for scaleup. These are shown in Table 7.6.

Table 7.6: Areas of improvement for MUS scaleup

Government organizations	DDC/VDC	Communities	NGOs/INGO
• Fund collection from community for O&M • User group trainings (government staff should be trained by NGOs first) • Test drinking water in a lab • Develop working modality for government MUS infrastructure • Develop point of use water treatment technology • At national level, develop policy for MUS implementation to encourage donors to contribute	• DDC should run a pilot project in each VDC • Efforts for raised awareness within the DDC and VDCs • Mobilize community to seek VDC/DDC support for MUS • Incorporate NGOs and INGOs into the Development Committee[12] of the DDC • Simplify process of registering water users groups	• More exposure visis • Training of local manpower for O&M • Provision of maintenance tools • Create a fund for system operator wages • Leadership training • The community should manage the financial resources for their own project[13]	• Hold regular meetings of all stakeholders at the district level. • Allow communities to manage all funds • Get commitment from the major political parties to implement MUS • Plan timing of project budgets around the government's schedule so planning periods match up • Identify potential sites for MUS before government planning session

UNCERTAIN POLITICAL SITUATION IN NEPAL

The discussion of the MUS Learning Alliance in Nepal would not be complete without mention of the political turmoil in the country and its affect. Perhaps the most striking factor of the political situation that affected the MUS LA was the situation of district government. As mentioned above, the districts have been operating for the past few years in the absence of elected representatives in both the DDC and VDC. As the Deputy Director General of DoLIDAR so aptly put it, "without local leaders, without local representation, how can you work in the community?" Without a functioning government system at

the local level, government operations cannot run smoothly, money cannot be allocated on time, and the only recourse communities have to express their needs is contacting the one appointed VDC Secretary or DDC Local Development Officer. And, many VDCs do not even have a working Secretary. Due to this precarious government situation, NGOs have stepped in to provide community-level development. However, even though NGOs were able to work during the conflict and continue to work in under tenuous circumstances, it has definitely taken its toll on their operations.

Despite the success of MUS projects to get funding support at the district level, the Director of DoA's Planning Division said that funding support could have been much higher if a stable local government had been in place. He also claimed that the relationship between local government and communities could have been much stronger. He described how they have been unable to effectively monitor or backstop projects due to the unrest. Central-level staff were completely unable to travel and local staff were also being discouraged from visiting field sites. The Fund Board and CBWSSP also mentioned problems working with the communities during the conflict through delays in obtaining materials and monitoring due to road blockages.

The Maoists have now been incorporated into the government and are currently leading five ministries including several that are relevant to MUS. These include the Ministry of Local Development; Ministry of Women, Children and Social Welfare; Ministry of Forest & Soil Conservation; Ministry of Physical Planning and Construction; and Ministry of Information and Communication. Some individuals interviewed are hopeful that the future political situation will provide opportunity to Nepal, whereas others are more pessimistic about the potential situation. Regardless of how things evolve politically, the political situation will continue to affect all resource development in the country and MUS is no exception.

The political unrest did temporarily stall the decentralization movement within the government.[14] The Deputy Director General of DoLIDAR stated that the conflict had stopped the creation of technical units for each sector (irrigation, drinking water , etc.) within the DDC. Instead, the temporary arrangement has been direct technical support from the central government. (His department gives districts money both for irrigation and drinking water.) However, he described how the recent developments in the government are restarting the movement toward decentralization. Linking MUS with the renewed decentralization push would be beneficial. The DoA Planning Division Director also thought that MUS would be a great way to implement this shift toward decentralization because it could "be an entry point for empowering the people." He felt that MUS was an appropriate social mobilization tool and one of the best development examples for government to emulate because of the emphasis on community ownership. His prime concern during this transitional period was how best to channel the resources toward com-

munities. Fortunately, with the recent inclusion of MUS in the DDC development guidelines, it will be now be easier for communities to receive the necessary financial support for MUS projects.

However, if there is future political instability, the MUS movement could be delayed. Even though there is tenuous peace, according to the DoLIDAR Deputy Director General, the government is not in line with the peace process and it is too difficult to say whether there will be true political stability soon.

TAKING MUS FORWARD—CONCLUSIONS FOR SCALE-UP

Questions of System Sustainability

Some partners are more cautious about the long-term sustainability of MUS projects and want to wait five years before concluding success. Due to the use of low-cost technology, World Vision was concerned that it would not stand the test of time and were doubtful that the communities would be able to truly handle long-term operation and maintenance. Helvetas—Palpa were also apprehensive about whether the structures were long-lasting and said that it was too early to prove that the technological components in MUS are robust. They said that scaleup was likely a good idea. However, until systems had been around for at least five years, it was not worth involving the government in wide-scale MUS implementation or working in the more remote areas of Nepal. Fortunately, some of the first MUS systems are not far off from the five-year mark, and appear to remain in good condition.

Debate about Cluster Approach

A few interviewees debated the need for a cluster approach for scaleup. According to DoLIDAR, due to the interest of funding agencies, organizations attempt to cover all regions of the country with their work. This results in patchwork services. DoLIDAR criticized this approach because the scattered nature of coverage never translated into meeting the full demand of the district. And, if there are differences between the projects provided to two neighboring communities, the current situation of social disparity in the country is maintained, adding to political unrest. Instead, DoLIDAR is suggesting coverage of all demands for one district, including MUS, before servicing the next district.

The NITP Coordinator also believed that the cluster approach was ultimately better for development on the whole. However, in the case of MUS, he thought it best to establish one project in each district of the country, and let clustering happen organically from there. With one project in each district, all technical staff of the district could be trained at one project site. And, farmers from that district could visit a MUS project without being required to travel to another area to see MUS. Thus, demand for MUS from DDCs and VDCs would increase more easily. This idea was mentioned by others at the Kaski LA workshop as well.

Instead of using the political boundaries of districts, IWMI-Nepal suggested using a catchment or sub catchment perspective. Identifying many communities that would benefit from MUS within one catchment and working with them together would reduce technology support costs. Communities would be more willing to share resources if all were to benefit, resulting in larger positive impact.

Ultimately, whichever government body incorporates MUS within its structure will be responsible for choosing the most effective approach. Realistically, considering that IDE is already working on a few MUS projects with partners in multiple districts, NITP is working on four district pilot projects, and funders are keen to make sure that all districts are covered by any new initiative, it is more likely that the ad hoc approach will continue in the short term. However, if the DDC truly does become the "home" for MUS, then the cluster approach might become more viable.

Should MUS Have a "Home"?

There are many perceived benefits to MUS having a "home" within a government body. It would have a greater chance of securing regular funding by being a specific department's purview. It would be more easily incorporated into department policy. And, it would benefit from the department's manpower and infrastructure. However, there are potential downsides to MUS having a "home" as well. As soon as MUS has a "home," other departments can claim it is no longer their responsibility. In the end, there might be less effort or coverage than the current situation of multiple departments doing their work and turning a blind eye to multiple uses. Most interviewed agreed that MUS scaleup had to be driven from the bottom in conjunction with policy support from the top and that ultimately, the middle (DDC) would lead. They mentioned many exemplary policies in Nepal that currently exist but have no teeth because no one is pushing for execution. They claimed that it was communities through the DDC/VDC structure that would have to push integration of water resource use and true coordination between government agencies for MUS.

Moving Beyond the Current Model

In many of the interviews and meetings conducted for this chapter, there was a feeling that MUS could be so much more than it currently is. There were ideas floated about incorporating other productive uses like fish ponds, microhydro, or small-scale food processing. There was also a great deal of concern for increased efforts in sanitation to accompany the projects. Encouragingly, individuals were aware that these ideas were context specific and depended on the communities' needs and desires, available water resources, and the future mechanism for scaleup of MUS. With the new FINNIDA project, the incorporation of microhydro is being tested. And, with the momentum the

approach has gained throughout the country, inclusion of other components in MUS may be just around the corner.

Both the search for matching funds and the Learning Alliance process have led to strengthened partnerships and a clearer vision for the future of MUS. They have also provided current implementers with much-needed feedback to strengthen implementation processes. Ultimately all stakeholders agree that while MUS should be scaled up within Nepal, the government must incorporate into its structure to ensure future sustainability. And, coordination between all stakeholders is essential to provide all necessary support services—capacity building, market access, and technology access–in an integrated way. There are many positive signs that the MUS approach is an important piece of the future of water resource development in Nepal, particularly in the middle hills. And, throughout the interviews, there was a general feeling that projects like MUS are the future of Nepal. Most agreed that MUS is an extraordinary step toward community empowerment, effective water resource management, and coordination of all water resource development stakeholders.