



2011

Selected Good Practices in Agricultural Knowledge Management

Selected good practices from knowledge management interventions carried out by the Improving Productivity & Market Success of Ethiopian Farmers Project, implemented from 2005 to 2011



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የምርጫና ገበያ ልማት ሚኒስቴር
Federal Democratic Republic of Ethiopia
MINISTRY OF AGRICULTURE AND
RURAL DEVELOPMENT



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Introduction

This guide is developed by synthesizing successful field experiences within a project known as *Improving Productivity & Market Success of Ethiopian Farmers Project or IPMS Project*. The IPMS project was implemented from June 2005 to March 2011 in four of the larger regional states of Ethiopia – namely Amhara, Oromia, SNNP and Tigray. The main purpose of the IPMS project was to test methods, approaches, and processes that can help transform Ethiopian smallholder agriculture from subsistence to a market-oriented agriculture.

The project had four major project implementation pillars. These were:

1. Knowledge management
2. Capacity building
3. Commodity development, and
4. Research & promotion

As part of the knowledge management pillar, IPMS tested several interventions hoped to bring about a functional knowledge management system at various levels of the Ethiopian agriculture sector. At Woreda level, the project targeted the farmers in the Woredas where the project has been active as well the extension system within each Woreda. At Federal level, the project focused on the Ethiopian Agriculture Portal as an organizing platform and repository for information relevant to Ethiopian agriculture. The project also made limited interventions at Regional and Zonal levels.

In the following sections selected examples of these interventions are briefly described so that others trying to carryout similar intervention can benefit from the experiences of the IPMS project. Specifically, the following interventions are discussed.

1. Woreda Knowledge Centers
2. The Ethiopian Agriculture Portal
3. MSc & BSc level education and research
4. Seminars
5. Working Papers
6. Enhancing the role of FTCs
7. Study Tours
8. Technology Exhibitions

The five interventions specifically target extension service providers while the last three include farmers and pastoralists to the mix. The descriptions that follow are not meant to be exhaustive or to be the only way to do the respective interventions. On the contrary, they are meant to assist those who are planning to do such interventions by sharing the experiences of a project that has done similar interventions before them.

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Woreda Knowledge Centers

A Woreda Knowledge Center (WKC) is an information resource center or venue that facilitates access to knowledge by providing the following functions:

- Traditional library
- Digital library
- Resource center
- Audiovisual center
- Online access point, and
- Informal meeting venue

In each of the above functions, a WKC provides only the basic necessities and should not be seen or expected to provide what a full service traditional or digital library normally provides. The intent is to establish a venue that brings tools, approaches, and processes that can help improve agricultural extension service delivery.

The IPMS project established 28 knowledge centers in its operational sites. Ten of these knowledge centers were Woreda (district) based and 18 were established at Zonal and Regional levels. This good practice guide focuses on lessons and experiences gained while establishing and operating Woreda Knowledge Centers. The pictures below show examples of a typical Woreda Knowledge Center.



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In order to provide the right perspective to readers that may not be familiar to the project, the intervention context in which these knowledge centers were setup is described below so that anyone consulting this guide will have a better feel for the rationale behind the good practice recommendations.

There are over 600 districts (Woredas) in Ethiopia. In most districts, there are no public libraries and the use of high school and college libraries is restricted for use by registered students. Tele-centers are rarely available in rural districts. Often, the only way an extension worker can expect to get access to online information is if there are Internet connections in the Woreda Office of Agriculture or when he/she goes to larger towns where there are tele-centers. Another potential ICT resource, known as WoredaNet (established by the Ethiopian Government), has interconnected most Woreda Administration Offices in a nationwide data, voice, and video internet network – including access to the Internet. However, the services of the WoredaNet are typically limited to the staff of the Woreda Administration and are not easily accessible by the staff of the Office of Agriculture.

Woreda Knowledge Centers were therefore established to fill this gap in opportunities for access to information sources. It was also the project’s objective to establish a favorable environment for knowledge sharing among staff.

Finally, it is worth noting that the elements of good practices documented in this guide were evident to varying degrees in the various knowledge centers. Some centers managed to implement almost all these practices in a sustained manner. Others did some of them well and a couple of our centers were not able to implement most of these practices for various reasons. The diverse experiences encountered while implementing these centers has enabled the project to distill lessons that will be important when scaling up such efforts. The lessons from multiple locations have been synthesized to bring out a composite picture of the elements of a well run knowledge center.

Approaches to establishing Woreda Knowledge Centers

Successful realization of a sustainable knowledge or information resource center *requires all potential stakeholders (those who fund it, use it, and operate it) understand and accept what it takes to establish and operate such a center.* The idea of a Woreda Knowledge Center; with computers, a TV set, and a DVD player, and Internet access is usually an exciting idea because, in the current reality of a typical Woreda Office of Agriculture, such facilities are often rare and welcomed treats. However, sustainably operating such a center requires financial, human resource, and organizational commitment with the associated investment that entails. A firm belief in the added value such a center is the first step in this direction. One method the project used to bring about such awareness and eventual commitment is to use a *participatory planning process* that involves all key stakeholders.

Another good approach to establishing such centers is to follow the dictum “plan, implement, learn, modify”. Following are some key points that need to be considered when **planning** to establish a knowledge center.

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Determine the business case

- The current national push and desire to make agriculture market-oriented requires an extension system that can assist farmers to be agile in responding to market signals. For the extension system to adequately provide such a service, it needs to be continually aware of what happens near and far in all areas that are relevant to farmers. Easier access to the Internet provides the extension system access to diverse sources of information resources that enables it to better respond to farmers' information needs.
- Digital content (on CDs, DVDs, and hard disk drives) can be used for continual capacity building training of both the extension staff (and indirectly for training farmers).
- Woreda knowledge centers can be used as tools for building a culture of informal knowledge sharing among extension staff by hosting seminars and other informal knowledge sharing events in such venues.
- Inviting experts from Regional research and extension units will enable the Woreda extension to acquire new knowledge. WKC facilities can be used to regularly host such events and recorded sessions can be made available in the WKC for later viewing.

Determining direct and indirect cash outlays

The financial resources needed to establish a Woreda Knowledge Center include both direct upfront costs for setting up the center and ongoing operational costs needed to maintain the center. Realistic assessments of such costs and how they will be obtained need to be carried out in advance. A budget may be allocated by the Woreda Office of Agriculture or the Woreda Administration if funds are available and the business case is made sufficiently clear where the potential return on the investment is convincing enough to make the initial investment. Alternatively, other sources of funding may be considered. Examples of such sources include projects operating in the Woreda with mandates to cover such expenses, foundations, and/or private sector stakeholders. Another potential source of funds (although not tested in any of the IPMS supported knowledge centers) is devising a means for the center to "earn" some part of the funds needed for operation, by setting up a "fee for service" model of operation for some types of services. (e.g. charging a small fee for screening sporting events). When preparing the budget needed to setup a knowledge center, consider the following:

Establishment cost

- Building construction (if a large enough room is not readily available)
- Tables, chairs, and shelves
- ICT Equipment & accessories (computers, printers, TV, DVD Player, Internet access devices, generator, UPS, etc)
- Initial stock of books, CDs, DVDs, posters, etc.

Operational cost

- Salary for WKC coordinators
- Salary/fees for routine technical support (hardware and software) personnel.
- Utilities (electricity, telephone, and Internet usage fees)
- Occasional fuel for generators used during power outages

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Selecting a good location

A Woreda Knowledge Center should be a well lighted, clean, and inviting space that encourages patrons to frequent it. As such, it is important to select a location that will be appropriate to provide a library-type service. That means quiet, large enough to host the anticipated number of concurrent visitors, with plenty of natural light. One of the early Knowledge Centers in the IPMS project was in a room that was also used to store farm chemicals. On top of that, it was a very small room not far from a toilet facility. These are hardly ingredients for a successful center. The particular Woreda later moved the center to a much larger room that was visible from all corners of the Office of Agriculture and with plenty of natural lighting that is inviting for anyone hoping to take a few minutes to keep up with the latest news or information on his/her field of work.

Content

- Like any good library, the available collection of books, manuals, CDs, DVDs, etc should be robust and diverse enough to warrant frequent visits by potential patrons.
- Linkage with information sources should be established. These can be RARIs, BoARD, international sources such as AGORA, etc. Many such information sources provide content for “free”. Other may have some nominal fees. A good example of such a resource (which was developed by the IPMS Project is the Ethiopian Agriculture Portal www.eap.gov.et (EAP). There is also an offline copy of the EAP which contains most of the resources is also available from the Ministry of Agriculture. As the name implies, the offline version of EAP can be used without an Internet connection.

Infrastructure

- Infrastructure such as adequate supply of power, Internet connectivity, backup generators, and ICT tools such as PCs, TV, CD/DVD players are important differentiators of a good knowledge center.

Technical support

- Access to ICT technical support (both hardware and software support) ensures that investments in such tools don’t get wasted (or sit idle) after a few months of use with problems that are easy to solve when basic technical support is available.

Supportive organizational culture

- The staff (potential patrons) should be empowered and encouraged to use the centers by allowing them to spend time both during regular office hours and as well as evenings and weekends.
- The capacity of staff to do Internet-based research should be strengthened. This includes first creating awareness about the vast amount of resources available on the Internet that can help them do their jobs better as well as the skills on how to efficiently access such resources.
- The overall understanding of knowledge as a critical “input” to agricultural development should be internalized. Instilling this shift in mindset requires sustained efforts

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Lessons Learned

- It takes sustained and disciplined effort to realize significant results from an investment in a knowledge center.
- A knowledge center needs a dedicated staff to coordinate activities of the center. A part-time staff may be able to do such coordination but it is often not as good as someone dedicated to the center.
- It takes money to run these centers and a clear financial commitment is needed by the Woreda, Zone, or Region intending to maintain such centers. But the investment will be worth it.
- Like every other intervention attempted by the project, committed leadership that has the vision to withstand inertia and mobilize and inspire broad support is a critical success factor.
- The computer skills of staff seem to have increased significantly as a direct result of frequent access to ICT tools and such skills are directly applicable in discharging better their jobs in general.

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The Ethiopian Agriculture Portal

IPMS helped to develop the Ethiopian Agriculture Portal (EAP), www.eap.gov.et – a web-based gateway to agricultural information resources relevant to Ethiopian agriculture. EAP is hosted on a server located at the IT department of the Federal Ministry of Agriculture. This good practice guide focuses on lessons and experiences gained while establishing and operating the EAP.

The Ethiopian Agriculture Portal (EAP) uses a simple, logically laid-out web interface from which users can access all areas of the system. The design parameters considered in the development process of the portal include; ease of use, ease of maintenance, ability to scale-up, and sustainability. The portal uses a relatively easy-to-use content management system that does not require extensive web technology skills. Although easy to use, the portal is driven by a powerful, flexible, open source database engine that can easily accommodate a large number of documents and formats.

An offline version of the portal that is distributable on DVDs, external (portable) hard disks, and flash memory disks has been developed to alleviate the difficulties of Internet access in many parts of Ethiopia. This option increases the potential audience of the portal to those with limited or no Internet connectivity. The offline copy of the EAP is available from the Ministry of Agriculture. Copies of the EAP-Offline are also available in many of the Regional Bureaus of Agriculture and Regional Agricultural Research Institutes.

The portal contains documents on agricultural commodities important to Ethiopia. Other useful online resources, capacity building materials, good practices repository, and useful links on the Internet are also accessible from the portal. Many documents currently available on the portal were heretofore only available in hard copies and even then in very limited distributions. Links to websites of stakeholders in Ethiopian agriculture, including national & international agricultural research centers, national agricultural universities, agriculture sector projects currently being implemented in the country and other Ministry of Agriculture affiliated web sites. Many other features can be added or removed as needed. Such additions or deletion are normally done by mutual agreement among the Ministry of Agriculture and other the stakeholders in Ethiopian agriculture who are closely working with the ministry.

Approaches to establishing agriculture portal

Clear strategic vision is the first requirements for developing a portal that is useful and sustainable. This strategic vision should be shared among all stakeholders – including those who develop the portal, who fund the development of such a portal, and those who maintain and operate the portal. Confusion or misunderstanding among any of these important actors results in decision whose ultimate impact may surface long after the portal is developed and deployed. In the case of the development of the portal, many of the key stakeholders (but not all) were consulted and attempts were made to craft a shared vision. However, because some key potential stakeholders were not in the initial planning process, there were challenges that surfaced later on which can be traced to such omission on the front end.

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Following are some key points that need to be considered when planning to setup an information portal to ensure smooth and sustainable development.

Business case (rational)

The IPMS Project and the Ministry of Agriculture collaborated in developing the Ethiopian Agriculture Portal. If a new portal (for non-agriculture or other specific need) is desired, the first thing one should consider is to determine why such a portal is needed. Making the business case (a reasoned explanation that shows the added value such an information resource portal may bring) is an important step to craft a clear strategic vision. The business case should show some of the following

- Why such a portal is needed (issues & opportunities)?
- How a portal can solve the issues or opportunities facing the organization?
- What is the recommended solution(s)?
- How does the solution address the issues or opportunities (benefits)?
- What will happen if the portal is not developed (the do nothing scenario)?
- How much money, people, and time will be needed to deliver the solution and realize the benefits?

A participatory planning process that involves key potential stakeholders can help bring out all issues (opportunities and challenges)

The IPMS project has followed an approach of “plan, implement, learn, modify” in doing many of its interventions, including the portal. This approach has been beneficial to get things moving quickly. However, one needs to keep in mind that good and thorough planning is still needed – especially when deploying big systems.

In the case of the EAP, the following can be seen as the rational (or the business case) for developing it.

- The government’s focus to make agriculture market-oriented requires an extension system that can assist farmers to be agile in responding to market signals. For the extension system to adequately provide such a service, it needs to be continually aware of what happens near and far in all areas that are relevant to farmers. Access to diverse sources of information resources and documents through the Internet and offline copies enables the extension system to better respond to farmers’ information needs.
- An agriculture portal increases the ease of access to up-to-date documents on good practices, research outputs, capacity building manuals, information on the status of ongoing projects and related activities
- An agriculture portal can be used to support the provision of timely information to policy makers, development partners, investors, extension service providers, and others who need to make informed decisions pertaining to Ethiopian agriculture
- An agriculture portal increase interactions among the various stakeholders in Ethiopian agriculture since it creates a platform for sharing knowledge on topics relevant to their mandates.

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Costs

The financial resources needed to establish an agriculture portal include both direct upfront costs for setting up the system and ongoing operational costs needed to maintain and update it. Realistic assessments of such costs and how they will be obtained need to be carried out in advance. A budget may be allocated by the implementing agency, by projects with mandates to cover such expenses, or government/non-government programs that engage in broad capacity building activities. Typical cost elements include:

Establishment cost

- Building construction (a server room if there isn't any)
- ICT software, hardware, and accessories (Servers, some desktop computers, server operating system, firewall software and/or hardware, Internet access devices, generator, UPS, scanners, etc)
- Tables, shelves and chairs
- Costs associated with Internet presence setup
- Initial stock of digitalized documents (if possible) or hard copies for scanning

Operational cost

- Staff cost (both for technical support staff and for staff dealing with content)
- Technical maintenance cost (hardware and software)
- Utilities (electricity, telephone, and Internet usage fees)
- Fuel for generators used during power outages

Hosting infrastructure

Good infrastructure is critical to a successful implementation of a portal. The site where the servers are hosted needs to be clean, dry and well ventilated. Adequate and consistently available electric power is critical. Fast Internet connection ensures efficient upload and download of large files. Frequent power outages and poor Internet connection that interrupt the availability of the portal deter acceptance of the portal or discourages visitors from returning back to the portal.

Content

- The main reason visitors access a given site is seeking information. Therefore, ensuring there is adequate, relevant, and timely content should be the most important consideration in the development of a portal in order to warrant frequent visits by potential customers.
- Linkage with information sources should be established. These will depend on the purpose of the portal. In the case of an agriculture portal; research centers, ministry of agriculture, regional bureaus of agriculture, international sources such as AGORA, were some of the information sources pursued as potential sources of content.
- File size of contents needs to be small for quick download time. This is especially true in places where Internet connectivity is slow
- The portal content should be aligned with the target audience.

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- An agriculture portal needs a full time content coordinator who is responsible for the overall content management; one who liaises with various content providers, check relevancy of documents, upload documents and make sure the portal is running up to date.

Technical support

- Access to ICT technical support (both hardware and software support) ensures that investments in such tools don't get wasted (or sit idle) after a few months of use with problems that are easy to solve when basic technical support is available.

Supportive organizational culture

- The staff (potential patrons) should be empowered and encouraged to use the agriculture portal by availing relevant and up to date information that increases their work efficiency
- The capacity of staff to do Internet-based research should be strengthened. This includes first creating awareness about the vast amount of resources available on the portal that can help them do their jobs better as well as the skills on how to efficiently access such resources.
- The overall understanding of knowledge as a critical 'input' to agricultural development should be internalized. Instilling this shift in mindset requires sustained efforts

Lessons Learned

- It takes sustained and disciplined effort to realize significant results from an investment in an information portal
- A dedicated full time coordinator for document inflow and content management is necessary. A part-time staff may do such a job, however there is a risk of not allocating enough time and space for the information portal.
- Constant promotion is important until a certain level of traction is achieved among potential users
- Clear financial commitment is needed by the organization willing to establish such a portal
- Like every other interventions, committed leadership that has the vision to withstand inertia and mobilize and inspire broad support is a critical success factor.
- Linkages with content providers help in maintaining a fresh supply of content to keep the portal interesting and up to date.
- Although uploading content to a portal does not need high-level IT skills, maintaining the backend infrastructure needs such a skilled resource. Like any such systems, sustainability will depend on having the IT department of an organization with such resources.

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MSc & BSc level education and research

IPMS supported over a 100 individuals who were mainly doing their MSc thesis research. This support was aimed at influencing the effectiveness of research in terms of its applicability to development and the research orientation of universities and students. Such influence was accomplished by guiding the way research is conducted, influencing the research topics, and supporting the utilization of research findings by making sure research results and findings are broadly disseminated in the districts about which the research was done.

MSc/BSc Training – Good Practices

- Identification of relevant topics based on targeted development needs. Project level problem identification process should include a broad cross section of stakeholders in the potential interventions as well as the use of secondary data such as GIS, expert consultation, and participatory diagnostic surveys (PRA). The District (Woreda) work plan for the period under consideration should also be consulted. Once problems and potential interventions are identified, problems with relatively clear potential solutions were dealt with the experts and the research institutions. Researchable issues were identified in areas where there were knowledge gaps. Students sponsored for BSc and MSc studies were encouraged to consider such researchable issues in their studies and thesis research. Based on this assessment, researchable topics can be identified to describe/quantify the existing systems (diagnostic studies and/or conduct action research on the interventions introduced (referred to as action research).
- Prior interaction of the students with development practitioners and/or project staff. Graduate fellows who identify researchable problems that also align with their interest develop concept papers in consultation with partners in the district where they want to do the study. These partners can be projects in the area of the district office of agriculture. The full proposal development by the graduate fellows then commences with university supervisors involved to the extent possible.

This helps to steer research by the students to priority researchable problems that had been identified during the diagnostic survey and work plan development as well as to studies which would be conducted with the view of developing specific intervention options or solving emerging problems along specific commodity value chains.

- Graduate students can present their research proposals to various bodies in the district and get feedback before the actual implementation commences to ensure relevance and a focus on problem-solving research. This is not a common undertaking but is worth trying to further strengthen the link between academic research and practical problem solving in districts.
- Mentoring of students. Technical assistance can be provided to graduate students by senior staff members of projects in the concerned area as co-supervisors, to promote good quality and practical theses development. Consultations with concerned parties on the general theme of how to steer agricultural research in universities towards contributing to development goals is always good.

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- Specialized training on topics such as research methodology, proposal writing, statistical analysis, and scientific presentation techniques are always helpful to enhance the quality and reach of research outputs.
- Encouraging graduate fellows to participate at relevant national forums such as conferences, workshops and seminars while implementing their thesis research helps to broaden students perspectives
- Enhancing students' learning experience by engaging them in development activities while they are doing their research (e.g. by providing technical assistance to extension units, training, experience sharing).
- Graduate fellows with some prior practical experience in the agriculture sector are believed to have better theoretical and possibly practical background than most DAs. To take advantage of this skill differential, graduate fellows should be encouraged to get involved in capacity development activities and to advise DAs and Farmers as well as provide technical assistance in their domain of expertise to others in the Office of Agriculture. One immediate area where such transferable skill may be apparent is in computer applications usage, where the very nature of graduate work may necessitate graduate fellow to acquire such skill and then in turn teach DAs and other experts in such skills.
- On the other hand, graduate fellows can get plenty of opportunities for interaction and experiential learning during their fieldwork and their stay in local settings. Such experience can help graduates fellow to have a better understanding of and an appreciation for indigenous knowledge. Exposure to such real life situations helps the fellows to better understand the complexity and diversity of the production and marketing systems, farmers' decision making logic and criteria such as in improved variety selection, participation in marketable commodity production, etc.
- Presentation/discussion of research findings with research clients (farmers and extension) servers as an important platform for graduate students to get additional forums for verification and/or validation of their findings and for sharing knowledge generated through their research. Therefore, graduate students should conduct seminars and share their research findings with experts, DAs, and in some cases, communities with whom they worked with during their research.
- Student alumni forum can serve as platforms to share findings amongst peers. Projects can facilitate such forums as another means to broadly share knowledge as a teaching as well as learning mechanism.
- Promotion and utilization of outstanding research outputs through various means is also another method to increase the impact of graduate research. Working papers, discussion papers, and at times publications in journals are some examples of such promotion and utilization of research outputs.
- When graduate studies are sponsored by projects or public institutions it is possible and advisable to target for increased participation of women since this is likely to eventually increase the number of role of women in decision and policy making platforms.
- Projects sponsoring graduate studies should also strive to establish formal interactions with university staff and advocate on focusing research thesis agenda and objectives to align with regional and national research priorities. This is particularly important considering the transitory

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nature of projects relative to national development timeframes. Frequent interactions can help in identifying opportunities to improve research as well as to pick out findings that qualify as public goods. A formal regional or national coordination mechanism and a platform should be considered to regularly translate recommendations and finding into concrete actions. A case in point is the recommendation of one national workshop facilitated by the IPMS project where the formation of a national *“Forum for Graduate Research in Agriculture”* was highlighted as one of the final recommendations of workshop participants. The forum will have deans of schools of graduate studies of relevant higher institutes as well as representatives from the MoA and EIAR.

MSc/BSc Training – Lesson Learned

This good practice guide in project sponsored MSc and BSc training is prepared by the IPMS project, it will help to briefly state some of the lessons learned during the projects execution of this intervention.

- Supervision of students is a time-consuming activity that needs to be carefully planned and resourced.
- A “mindset” change at universities regarding “development and action-oriented student research” is important for such research to positively contribute to the overall national agricultural research output. This change has started but needs further follow-up and attention.
- Greater flexibility in timing to accommodate married women’s other duties should be considered, without compromising overall academic standards.
- The experience offers an approach and modus operandi important to involve students in demand-driven research, knowledge sharing, development/capacity development activities and practical learning in real-life settings.
- The experience demonstrated that research by graduate students can be more relevant and practical solutions-oriented by involving employers and/or intended research output users, and by putting in place mechanisms and processes for facilitating research priority setting, implementation, knowledge sharing and quality supervision.

The lessons imply, on one hand, that graduate programs should be pro-active in creating partnership with regional and federal government actors and with projects engaged in development interventions. On the other hand, public and non-public development actors who are truly committed to sustainability should be more willing to partner with and strengthen the capacity of key capacity building national institutions – especially those engaged in graduate programs of agriculture and related disciplines.

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Skills Development

The project introduced a gender-balanced, participatory market-oriented development approach which required enhancement of the skills set of the program delivery providers (such as the extension service) and the skills of producers and processors of agricultural inputs, output, and services.

Two types of skills are distinguished i.e. skills in program delivery skills and skills in technical areas such as production, processing and/or agri-business.

Program delivery skills

IPMS facilitated program delivery skills development for extension and specialized staff. These included:

- Use of participatory and market oriented extension methods/approaches
- Marketing assessment, gender ,HIV/AIDS, and environmental assessment and planning concepts, and
- Use of knowledge management skills including facilitation and communication skills and use computers and audio visual equipment

Good practices in program delivery skills

- Awareness creation on the value of such skills to create demand for training
- MSc/BSc education in skills such as extension, marketing, knowledge management based on capacity gaps
- In service training of staff using training-of-trainers (ToT) approaches and/or consultants
- Involvement of HAPCO and Women's Affairs in HIV/AIDS and gender awareness training
- Computer and audiovisual training by specialized institutions
- Development of project manuals/training materials to facilitate training

Lessons learned in program delivery skills

- Integration of "IPMS" training in government programs/projects avoids duplication and confusion
- Follow up based on action planning will increase effect of training
- There was limited use of self-teaching software for developing computer skills. The preference was for instructor-led training.
- Involvement of staff from HAPCO and women's affair facilitated awareness Project manuals can contribute to the development of the subject matter; it needs not to be the "final" manual.
- Scarcity of well trained specialists in some program delivery skills needs to be addressed by the country's educational institutions

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Seminars

IPMS used seminars to develop a culture of knowledge sharing and to broadly disseminate “new” knowledge acquired/developed through formal or informal training. Seminars were mostly given by project staff, invited guests, as well as BSc or MSc students sponsored by IPMS either for their entire degree program or theses research.

Good practice elements in conducting seminars

- Seminar can be used as a forum for broadening networking (connections/interactions) among practitioners. These seminars can help develop for good knowledge sharing culture.
- Interactions during seminars expose students to local issues important to practitioners and how their research finding can be used to find practical solutions to local problems
- Students’ technical skills in doing presentation (the use of PowerPoint, LCD projectors, communications) were adopted by extension staff and used on subsequent presentations.
- To accommodate schedule constraints, innovative scheduling should be considered. For example, “brown-bag” sessions are seminars given during lunch hours, where participants interested in attending the seminar bring “packed lunches” and attend the session while eating their lunch.

Lessons learned in conducting seminars

- Students need to be aware of the need to do seminars.
- It is possible to build a useful database of research on locally significant issues by compiling seminar presentations on a consistent basis
- Educational institutions should consider presentation and communications skills as important areas of learning – in addition to the core topics in one’s program.

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Working Papers and other printed publications

As part of the capacity building and knowledge management component, the IPMS project felt that producing working papers and other publications as a vehicle for dissemination of knowledge outputs from the project would support market-led and knowledge-based development of smallholder agriculture. Therefore, the project published various resources in the domains of the academia, research and development to increase the uptake of the project output.

Working Papers, Toolkits, and Practitioners' Guides are used by the project to formally document the experiences of the project, provide ready-to-use approaches for conducting certain interventions, and as a means for capacity building. The basis of the working papers are various types of research conducted by project scientists, theses research conducted by IPMS-sponsored students, or collaboration between IPMS scientist and scientists from other national or international organizations and/or students. Toolkits and Practitioners' Guides are authored by ILRI scientists based on prior professional experience, project findings, and research.

Relevant guides and resources are prepared in local languages (Amharic, Tigrigna and Oromiffa) for a wider distribution and easy uptake. Those documentations that proved very relevant are further documented on DVD as training videos and documentary video by professionals in English and local language.

Elements of good practices in researching and writing working papers

- Topics selected for working papers are based on actual/practical issues that need to be addressed to solve specific agricultural development challenges or to promote good practices observed in project implementation
- The primary focus of working papers, toolkits and guides should be on addressing local needs not on being "peer-reviewed" international publication standard outputs. Therefore, they should be prepared in a language that average practitioners can understand
- Posters, brochures and fliers are efficient means for knowledge sharing and transfer as they are coupled with visual appeal and simple languages.

Lessons learned in researching and writing working papers

- Producing working papers and other publications can be expensive. Therefore, careful planning need to be done on what needs to be put out as a working paper or similar publications to ensure the return on investment considering the potential readership.
- Digital versions of working papers (web, CD/DVD) can reduce the cost of production and broaden the reach of the published output (some IPMS practitioners' guides have found audiences outside Ethiopia).
- Synthesized working papers can be useful to students, ATVETs, and universities. They can also be inputs for preparing textbooks.
- Encouraging and supporting the participation of graduate students in the preparation of working papers increases their skills and confident in writing for preparing professional publications.

Selected Good Practices in Agricultural Knowledge Management

- Working with the national research system and universities to prepare publications creates opportunities for further collaboration and knowledge sharing
- Working papers and other publications can be used to disseminate findings of work in progress, experiences and lessons to encourage the exchange of ideas and innovative thinking among researchers, development practitioners, policy makers and donors.

Selected Good Practices in Agricultural Knowledge Management

Enhancing the Role of FTCs

Farmer Training Centers (FTC) are centers established by the Ministry of Agriculture in order to conduct continuous training of farmers in various aspects of modern agriculture in order to bring about lasting positive change to the way smallholder farmers go about producing crop and livestock and how they tend to the natural resource base. About 18,000 FTCs have been constructed for this purpose. The ministry has formal (certificate-based) training curricula specially prepared for FTC-based farmer training.

Enhancing the roles of Farmer Training Centers (FTC) was an important aspect of capacity building and knowledge management interventions carried by the project.

FTC-based modular farmer training is an emerging model that has been introduced by the Ethiopian Ministry of Agriculture to enhance the public agriculture extension system. The IPMS project felt that strengthening and enhancing the capacity of FTC-based training and knowledge services is important to leverage and optimize the potential contribution of FTCs to market-led and knowledge-based development of smallholder agriculture.



A typical FTC is located within a village (or peasants association) and is composed of a large hall (about 60 square meter.) and a demonstration plot of about three hectares). Three development agents (DAs) are assigned to each FTC. Each DA typically has training in one of three areas, namely crops, livestock, or natural resource management. A modular training program that follows specific curriculum is offered in which participating farmers can get “green certificates” up on completion of a given set of modules.

To complement government’s effort and help in transforming FTCs to IPMS project selected 40 FTCs in the 10 Pilot Learning Woredas (4 ‘model FTCs’ from each PLW) and carried out targeted interventions in various knowledge management and capacity building areas.

Selected Good Practices in Agricultural Knowledge Management

To enhance the role of the FTCs:

Capacity of the DAs has been strengthened through formal in-service training and involving DAs in knowledge sharing and learning events such as study tours, participation in commodity platform, etc

Selected FTCs in each PLW were equipped with computers, printers, audio-visual equipment (TV sets and DVD players), training and extension materials (printed publications as well as audio and video based materials), and telephone and Internet connections. FTCs received financial support for irrigation equipment, demonstration materials and utilities. They were provided with technical assistance and linkage facilitation service.

This was done to increase access to knowledge, create conducive environment to share knowledge, and to encourage farmers to experiment, test and “create” new knowledge

Good practices observed from the various interventions in the 40 FTCs supported by the project include:

- Enhancing the role of FTCs for farmers training by adding non-certificate training sessions on priority commodities, contributing to training materials, contributing to practical training through demonstration, bringing different trainers, using audio visual tools for teaching.
- Enhancing the role of FTCs as agricultural knowledge centers by increasing access to knowledge for DAs through telephone, internet, off line copies of EAP, supply of materials, market information and by using FTCs for knowledge sharing activities such as commodity group meetings, field days etc.
- Enhancing the role of FTCs as sources of input supply such as seeds/planting materials for forage production, and fruit seedling production by providing material support and technical advice
- Enhancing the operation and management of FTCs through income generation activities and financial management
- Encouraging the use of FTCs as general multi-purpose community centers serving the community in various capacities
- Leadership at Woreda, Zonal, and Regional levels that believes in the relevance of FTCs and committed to support them is essential to the success of FTCs.

Selected Good Practices in Agricultural Knowledge Management

- Willingness and readiness of the extension system to respond to evolving needs of farmers stimulates interest of farmers in FTCs. (e.g. Access to knowledge to resolve unexpected challenges, demonstrations of “new” findings that are relevant to local farmers, etc)
- Income generating activities such as multiplication of forage seed/planting materials or seedling production can greatly assist the viability and sustainability of FTCs.
- FTCs with access to basic infrastructure (electricity, telephone, Internet) are much more likely to register good results in attracting and assisting farmers than those with no or very limited access to such facilities. Maintaining live animal demonstrations on FTCs requires careful consideration, since animals, unlike crops, require 24 hours /7 days attention
- Clear implementation plan, capacity strengthening and systematic monitoring mechanisms are important to introduce ICTs and ensure responsive, effective and sustainable use of the tools in the delivery of agricultural extension services

Selected Good Practices in Agricultural Knowledge Management

Study Tours

Study tours are organized and targeted visits where a group of farmers, extension specialists, and/or administrative or policy making personnel are taken to locations where there will be opportunities to see “new” ways of doing things and for sharing knowledge and experiences. This creates an opportunity to physically witness practical examples of what visitors may have heard or read about. At times, such visits may expose the visitors to completely new experiences.

The motivation or purpose of study tours is knowledge “capturing” and exposure to facilitate technology and/or process adoption. It enables participants to learn about new technologies, practices, and get inspiration from others experiences. The project also strived to help develop a culture of knowledge sharing.

On balance, study tours have been effective in deliver on the promise of developing a culture of knowledge sharing and creating opportunities for learning and adopting new technologies and/or agricultural practices. However, the following good practice guides are recommended to increase the value of *Study Tours*. Some of the benefits of study tours include:

- Study tours provide a reality based intensive learning experience that is interactive where farmers and staff from extension service providers see innovative practices that have been successfully implemented by their peers or “models”.
- They provide opportunities to gain strategic or operational knowledge that is practiced by those who are actually profiting from such endeavors. In other words they see in action those practices they may have only known as theories.
- It gives them opportunities to evaluate their own experience journey, challenge their thinking, create new ideas, and benefit from such reflections.
- Provide opportunities to network with like-minded individuals who are also engaged in endeavors they are trying to adapt.

However, to realize the full potential of study tours, careful planning, execution, and learning is needed. Some of the good practices observed from the five years of experience in the IPMS Project include:

- Study tours need to be carefully targeted in terms of what to see, who should participate, when the best time is to conduct such tours, and the most cost-effective venues to get the desired outcome.
- Obviously, study tours are most cost efficient when target sites are nearby. However, there may be times when going further may be worth it if that means there is a significantly better return from the increased distance in terms of what to see, the inspiration or healthy competition this creates
- The private sector may participate in cost sharing for a mutually beneficial (with the tour participants) arrangement.

Selected Good Practices in Agricultural Knowledge Management

Lessons learned in conducting study tours include:

- Study tours are important to bring in new ideas and develop a vision of what is possible
- If used effectively, travel time when going to and coming back from the study tour, can essentially make into travelling workshops.
- Linking visiting farmers with “host farmers” or other “host families” for overnight stays result in more interaction and establish trust regarding what farmers see during the tour and creates opportunities for more practical demonstrations
- The cost of study tours prohibits frequent use of such interventions, even when done periodically. Therefore, composition of study tour participants should be carefully planned to include those individuals with reflective personalities, who can stimulate interactions and report back what they have witnessed to folks back home.
- Cost effectiveness should be viewed in terms of longer term return on investment.
- It is important that participants report back their experiences to the broader community that stayed back – supported with pictures, stories, and any other appropriate and effective tools and methods.
- Follow up support is important for adoption of experiences brought from study tours and documentation for further utilization.

Selected Good Practices in Agricultural Knowledge Management

Technology Exhibitions

Technology exhibitions are themed exhibitions where selected farmers, private sector actors, extension departments, universities, NGOs and other agricultural stakeholders showcase products, tools, approaches which they believe are special enough to feature in such venues. The featured items can be physical goods, posters, photographs, video presentations, or live explanations by the exhibitors. These forums provide broad and diverse opportunities to scan the state of affairs of the features exhibits.

The IPMS project was launched in the summer of 2004 with an accompanying technology exhibition. This exhibition (which was held in ILRI compound) targeted policy makers, researchers, extension staff, and international and national NGOs.

The project held the first highly successful regional technology exhibition in collaboration with Tigray Regional BoARD with a heavy focus on market-orientation and innovation. Since similar exhibitions were held in various regions. Successful “cattle fairs”, which are variations on technology exhibitions were also held in one of the IPMS districts.

Good practices in technology exhibition include:

- Early and participatory planning process is crucial to the success of technology exhibitions
- Inclusion of innovative farmers from a broad area (Region-wide if possible) makes a far better knowledge sharing event than showing few local innovations.
- Broad spectrum of exhibitors, such as regional, national, and international research institutes, Woreda and Regional agricultural offices/bureaus, NGOs, private sector, and marketing organizations is important to the success of technology exhibitions.
- The diversity of visitor also plays a part in the success of exhibitions. For example, farmers, university and high school students, and staff from the research and development organizations.

Lessons learned in conducting technology exhibitions

- Technology exhibitions are a method for creating quick and broad exposure to new ideas, new technologies, new products, and new service provisions. They are also effective in creating linkage between farmers and input suppliers and service providers. They often give visibility to locally available products and services that were somehow unknown to many potential local customers.
- Careful planning is important to determine optimum mix of exhibitors, appropriate timing, and cost effectiveness.
- When planned in a participatory manner there are opportunities for cost sharing with private sector participants and other stakeholders in the community.
- A permanent technology “exhibition” in Kenya where live and “vertically integrated” demonstrations of various agricultural inputs and outputs warrants careful study to see if it makes sense (cost, utility) to do the same in Ethiopia.
- Discussion forums that are held right after technology exhibitions provide good feedback loops, enable service providers and input suppliers to estimate demand for their products/services and allows for collaborative solutions development to problems/issues expressed during the exhibition.