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Innovative Approaches of Knowledge Management in Agriculture: Case of IPMS-Ethiopia

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Introduction

It is crucial for smallholder farmers and pastoralist to access and use relevant information and knowledge in order to adapt and respond successfully to changing opportunities and challenges in a market oriented development environment. The delivery of extension services in such contemporary environment requires innovative and inter-related approaches of knowledge management and capacity development.

Agricultural knowledge management is a rather new concept in Ethiopia with only few projects trying out the approaches and extracting lessons. System for knowledge sharing and learning among all stakeholders of the county's agricultural sector was weak. Identifying this gap, Improving Productivity and Market Success of Ethiopian Smallholders (IPMS) project introduced agricultural knowledge management system in areas the project operates to enable institutions, practitioners, farmers and pastoralists to innovate and/or adopt appropriate technologies from research and development institutions for improved efficiency and increased output. Knowledge management closely links with capacity development in that certain sets of skills (technical, managerial) are required to implement interventions in most fruitful way. Though capacity development is an age old tool for agricultural extension in Ethiopia, the importance of linking it with Knowledge Management (KM) and designing such training in an innovative way is a recent experience. Both KM and capacity development takes place in a complex social, political and economical environment.

This paper looks into KM and capacity development experiences and lessons of a donor funded development project in Ethiopia, Improving Productivity and market Success (IPMS) from 2004- 2012, by discussing the process and approaches used in KM and capacity development and extracting good practices in KM to transform subsistence agriculture system into market oriented agricultural development.

Materials and Methods

The delivery of extension services in the contemporary environment of developing countries requires innovative and inter-related approaches of knowledge management, skills development and partner linkages. IPMS project has been testing different tools and processes that give emphasis on market demand, knowledge sharing, capacity development and public-private partnership for improving the

extension service delivery in 10 pilot districts of four regional states of the country. Taking into consideration of the three socially enacted processes of Knowledge Management: Knowledge capturing/ generation, storage/retrieval, and sharing/transfer, IPMS devised and tested various tools and approaches to achieve its objective in knowledge management. The three process of knowledge management represents both its cognitive and social nature and utilization both at individual and collective practices and culture. KM in IPMS was also divided into internal-within the project, and external- beyond the project. Project benchmarks and progress indicators were identified in the first quarter of the project implementation with regular follow-up on the processes.

Various project documentations on knowledge management, capacity development, and project monitoring and evaluation reports both at headquarters and sites were consulted to compile this paper.

Discussion

Of the objectives of IPMS, managing its organizational knowledge meant availing and amplifying knowledge created by project partners and staff at all levels as well as crystallizing and connecting tacit knowledge with explicit knowledge in such a way that it magnifies the development endeavor.

The KM system of IPMS considered increased awareness and understanding of knowledge requirements for managing the priority commodities of the farming systems; increased access to appropriate technologies by target groups; establishment of a National Agricultural Information Resource Center (NARIC) and deployment of ICT infrastructure to support the KM activities and make them functional at regional, zonal and district levels. The expected output of the overall KM intervention at startup phase was development of a sustainable knowledge management system that makes use of advanced technologies to capture, synthesize, store and share knowledge.

Tools and means

Communication tools are often necessary to enable the knowledge transfer process, although this does not always mean ICT tools. For explicit knowledge, more and more information and communication tools are available, such as the Internet, databases, expert locators, workflow systems, etc. Depending on the context, capacity and efficiency, IPMS have managed to use the above tools for project management and internal communication as well as to reach wider audiences. These tools, through which data, information, and knowledge are transferred and transformed from one state to another are categorized into three KM processes;

Knowledge Capturing: This comprises activities associated with the entry of new knowledge into a system, and includes knowledge development, discovery and capture (Newman and Conrad, 1999). Tools identified for capturing knowledge by IPMS are: research by Bachelors and Masters students; field days and study tours at different levels; and setting up knowledge centers where experts and development agents find knowledge and information in different formats- books, CDs, DVDs, internet and the like. Research by graduate students proved to be more relevant and practical solution-oriented in a context especially when institutions, employees and intended research output users are involved in the processors. Study tours and field days are age old tools of KM. They are both for knowledge capturing and sharing. These tools enable participants to learn about new technologies, practices, and get inspired from others' experiences through evaluating their own journey, challenging their perception, creating new ideas, and benefiting from such reflections. It also provides opportunities to network with like-minded individuals who are also engaged in endeavors they are trying to adapt.

Knowledge Storing: includes all activities that preserve knowledge and allow it to remain in the system once introduced (Newman and Conrad, 1999). IPMS and the Ministry of Agriculture collaborated and developed the Ethiopian Agriculture Portal www.eap.gov.et after realizing the challenge and impact of not having easier access to up-to-date documents on good practices, research outputs, and capacity development for market oriented agricultural development. Many documents currently available on the portal were heretofore only available in hard copies and even then in very limited distributions. In addition to the Ethiopian Agriculture Portal, IPMS also had its own website www.ipms-ethiopia.org for storing and sharing project documentations.

Knowledge Sharing: refers to activities associated with the flow of knowledge from one party to another. This includes communication, translation, conversion, filtering and rendering. Agricultural knowledge centers (AKC) at regional, zonal and district levels were used as tools for building a culture of informal knowledge sharing among extension staff. They also served as places for knowledge capturing and knowledge storing. Methods used to make the AKC functional include; hosting seminars by experts from the regional agricultural research institution on new technologies/systems in agriculture development; knowledge sharing platform after a certain visit in or outside of the organization; as a place of brainstorming and reflection on the agricultural practices; a place to re-play recorded sessions of seminars.
Field visits and other activities in the local area. Short videos, Participatory Agricultural Radio Series, Posters and flyers were other means of knowledge sharing. The tools were prepared in local languages for increased awareness and knowledge of commodity value chains by producers and development agents.

Capacity development

IPMS focused on strengthening innovation capacity of farmers, pastoralists, community-based and private sector organizations, and agriculture and natural resource management public organizations, through technical and entrepreneurial skills development and, facilitating linkages between relevant actors. In the mean time the project facilitated the development of skills and capacity of the service providers through formal support for in country Masters and Bachelors degree training.

The IPMS project felt that strengthening and enhancing the capacity of Farmer Training Center (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. Accordingly, IPMS carried out various KM and capacity building interventions such as; strengthening capacity of development agents through formal in-service training and involving DAs in knowledge sharing and learning events such as study tours, participation in commodity platform; equipped selected FTCs 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. They were provided with technical assistance and linkage facilitation service.

Conclusion

The IPMS project followed systematic and step-wise approaches of knowledge management and capacity development by support of various ICT and non ICT tools that facilitated multidirectional knowledge flows, empowerment of practitioners and linkage creation to improve productivity, profitability and sustainability of market oriented agricultural development. Major tools and processes that brought the intervention to fruition include; establishment of agricultural knowledge centers for up to date and relevant information resource delivery, enhancement of program delivery and technical skills through participatory training; establishing partnership with various stakeholders and institutions at all levels; and

developing a web based platform, Ethiopian agriculture portal www.eap.gov.et, for availing agricultural resources relevant to Ethiopian agriculture. A lesson from IPMS on implementing the above components include; the need for an overall understanding of knowledge as a critical 'input' to agricultural development being internalized among program implementers at all levels; importance in building capacity of actors.

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