Institutionalization of the AHI's Inter-disciplinary and Multi-institutional Approach into the DRM System in Tanzania

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Abstract

Due to complexity of farmers' environment in the African highlands, AHI's research approach emphasizes an inter-disciplinary and multi-institutional participatory research, which seeks the active involvement of various stakeholders knowledgeable in other fields. AHI's main objective is improvement of the livelihoods and household incomes of inhabitants of the highlands while retaining the long term productivity of the land. On the other hand, the Department of Research and Development (DRD) having their own perspective, has also been challenging. So, how does one achieve a bottom-up process that has strategic links across the region? How does one negotiate these levels to gain appreciation between levels and actors? Various operational mechanisms are discussed and evaluated. To have effective performance and implementation of the various linked agendas, one has to foster and manage 'unequal' members and diverse teams at site, national and regional levels to enhance positive interactions and to ensure clearly articulated complementary roles and responsibilities. Propelling and dispelling factors, difficulties and achievements for effective, functioning to integrated, multidisciplinary team work are summarized and lessons learned presented. Various types of partnerships between research organizations are elucidated and progress lessons are reviewed. Analysis of partnership issues is made against a 'partnership assessment framework' that was developed for monitoring and evaluating these relationships. Different partnership configurations that link research to development have emerged and have varying strengths and weaknesses

Introduction

The complexity of farmers' environment, in many parts of the highlands of the tropics, makes it difficult for scientists (of one discipline from one institution) to come up with appropriate new technologies or recommendations. This complexity results from both bio-physical and social-economic factors (eg variation in bio-diversity and soil variability, wealth status etc). Conventional agricultural research tends to lead to general recommendations, identified in a process during which the complexity is reduced by limiting the number of researchable factors and by disentangling the research into separate disciplinary fields (URT, 1991). Adoption rates of technologies developed through this process are often disappointingly low (AHI, 2001; Mowo et al. 2002).

AHI uses a multi-disciplinary team approach in which partners with different disciplines from different institutions work together with farmers in the R & D process, developing a basket of technological options for different farmer categories specifically focusing on the complex NRM in the humid highlands of East and Central Africa (AHI, 2001). On the other hand, the Department of Research and Development(DRD) of the Ministry of Agriculture and Food Security (MAFS) implements different research projects many of which use different participatory research approaches. So far there is no common framework to assess or monitor these approaches for institutional harmonization.

This paper looks at the multi-disciplinary and multi-institutional participatory research approach adopted by AHI and compares it with approaches followed by research projects under DRD. The specific objectives of this study are (1) to analyse the potential and limitations of participatory research methods/approaches being used by AHI and different research projects in institutes run by DRD and (2) look for possibilities to integrate these approaches for effective technology generation and dissemination in Tanzania.

Methodology

The following methods were used to solicit opinions of different stakeholders in the process of carrying out participatory research and development.

- Discussion with AHI Lushoto team about how they operated
- Discussion with DRD staff on how research teams plan research and development
- Discussion with groups of farmers on the appropriateness of the approaches (AHI vs DRD)
- Discussion with researchers on the appropriateness of the approaches (AHI vs DRD)
- Case studies of joint analysis of participatory research methods being used (AHI vs DRD)

Discussion with AHI Lushoto team about how they operated

Lead questions/themes in discussing with the AHI Lushoto team were as follows:

- How they organized participatory research in addressing NRM issues
- What lessons the team has learned

Discussion with DRD staff on how research was planned

Lead questions/themes in discussing with DRD staff were as follows:

- How they organized participatory research in addressing NRM issues
- What problems did the team experience

Discussion with farmers on the appropriateness of the approaches (AHI vs DRD)

Lead questions/themes in discussing with farmers were as follows:

- Whether involving them in identifying problems and working together with researchers to solve their problems was of any help
- Whether they were able to identify researchers of different disciplines or from different institutions during researcher visits (not clear)
- Whether they found working together with researchers and other stakeholders was of any help

Discussion with researchers on the appropriateness of the approaches (AHI vs DRD)

Lead questions/themes in discussing with researchers were as follows:

- How they felt working in an environment where scientists of different disciplines and from different institutions work together
- Whether they encountered any problems
- Whether they found it important to work in joint teams of researchers with different disciplines and from different institutions
- What motivation they have in working with researchers and farmers

Case studies of joint analysis of participatory research methods being used (AHI vs DRD)

The first step in this joint study was to develop a sound framework for the assessment of participatory research methods used in different projects/institutions that combined natural resource management. Using this framework (based on identified principles and values) different participatory methods used were assessed. The general objective of the study was to assess the different participatory approaches used by different projects in DRD and AHI in order to harmonize the approaches and come up with a common framework on which the research system in the DRD will operate. In the study 9 research projects using participatory research methods were picked up for in-depth analysis.

The selected case studies were:

- The Participatory Learning and Action Research (PLAR) on Integrated Plant Nutrient Management (IPNM) project based at ARI Mlingano, Tanga.

- The Participatory Plant Breeding (PPB) approach under the Eastern and Central African Bean Research Network (ECABREN) at ARI Selian, Arusha.
- The Indigenous Soil and Water Conservation Project (ISWC) coordinated by Cooperative College, Moshi.
- Farm-Level Applied Research Methods for Eastern and Southern Africa (FARMESA) based in Dar es Salaam.
- Sorghum and Millet Improvement Program (SMIP) based at ARI Ilonga.
- African Highland Initiative (AHI) in Lushoto, Tanga Region
- SADC/ICRAF Agroforestry Project in Tabora Region
- Lake Zone Client Oriented research Project (COR-LK) in Ukiriguru Mwanza.
- Integrated Residue Management Project at ARI Tumbi, Tabora

Results

Discussion with AHI Lushoto team about how they operated

In addressing NRM, AHI Lushoto deals with a range of institutions (Lyamchai and Mowo, 1999). These include SECAP, NTSP, TAFORI, TIP; researchers in NRM from SARI, ARI Mlingano and HORTI Tengeru, stockists, policy makers, the government machinery (DALDO, DED, DC, Local governments), farmer representatives and farmer groups such as UWALU and Lishe Trust) and religious institutions.

The process involves selection of partners who are committed to addressing NRM issues and exploring all possible researchable problems which are later prioritized. Selection of researchable problems is based on agreed principles and potential for success. Later resources needed are identified (within AHI and/or from partners). Roles to be played by each partner in all other phases of research (planning, write ups, implementation, monitoring and evaluation) are identified. Activities are jointly carried out.
The approach encompass multi-disciplinary team approach, Inter-disciplinary team, multi-institutional, working with stakeholders in the R & D process, developing a basket of technological options for different farmer categories to select what is feasible, specifically focusing on integrated NRM in mountain ecosystems (AHI area of specialization). Now this is actually the model most research programs are advocating.
The team felt advantaged by being able to locate most partners in Tanga region and nearby Arusha region. This has reduced the costs of organizing visits and meetings of partners.

Discussion with DRD staff on how research is planned

The DRD is a department within MAFS mandated to administer (coordinate) agricultural research in Tanzania. It is organized along 7 research zones. Research planning has been decentralized to the Zonal Centres. Participation of researchers of different disciplines and institutions within a zone is through operations of the IPR, ZTC and the ZEC. Research problem identification is either by single or multi-disciplinary approach and often involves farmers. Research proposals are first discussed at department meetings and later at Institute research meetings. Potential projects are forwarded and discussed at IPR (researchers and stakeholders). Approved projects go to ZRC (researchers and stakeholders). ZEC (policy makers, researchers and other stakeholders) make final approval for funding. Implementation (either on-station or on-farm) is by researchers and target farmers. Monitoring and evaluation is done by scientists and extension service. Adoption of findings is done by target farmers. It was evident that collaborative research projects had their own mode of planning and use different participatory approaches.

Discussion with farmers on the appropriateness of the approaches (AHI vs DRD)

Farmers felt that due to the nature of constraints being handled in the watershed, AHI needed expertise not only in agriculture, forestry and animal husbandry but also in other disciplines. Although farmers were not able to readily recognize researchers' disciplines, they were quite happy that research teams were able to address many issues involving livestock, crops, land and water. Farmers in other projects where single discipline

experts are involved (e.g. crop production) were at loss when confronted with livestock or water harvesting issues.

Discussion with researchers on the appropriateness of the approaches (AHI vs DRD)

Researchers felt that involvement of farmers ensures sustainability of projects since they consider them their property. By adopting a holistic and integrated approach to NRM rather than solving one problem at a time, and working in interdisciplinary and multidisciplinary teams ensures effective use of the available resources including manpower. Researchers now realize that by working closely with the farmers they are able to continually reflect on their performance, learn and gain experience from the communities they worked with. Through feedback researchers are able to revisit their strategies and approaches in time thus minimizing chances of making mistakes.

However, while AHI believes that the success in research in NRM requires collaboration (among professionals, institutions, farmers and farmer groups etc) with the skill mix and resources, researchers were concerned about high costs when involving many stakeholders (farmers, researchers, extension service, private operators) in an inter-disciplinary and multi-disciplinary manner.

CASE STUDIES OF JOINT ANALYSIS OF PARTICIPATORY RESEARCH METHODS BEING USED (AHI VS DRD)

Most cases did not incorporate broad aspects of implications of technology such as marketing and natural resources management aspects (AHI, 2002). Likewise the question of scaling up was not well addressed. The mandate of the research agenda is narrowly defined and the link between research and extension is weak in most of the cases studied. Integration of disciplines is weak with only multidisciplinary being well addressed. Interdisciplinary is not given due consideration. Reports from researchers are in a format that is not useful to farmers and feedback to farmers by researchers such as through use of extension materials and discussions is lacking. Most of the projects studied were fairly effective on three of the five impact areas identified. These are: Sharing of information and knowledge between farmers and farmers seeking for innovations to progress collectively, adoption and adaptation of improved techniques and practices, and orientation of farmers towards markets. The involvement of farmers in technology development ensures effective dissemination and adoption of technologies since farmers become part of the whole process (Rutatora et al. 2004). Of the cases studied AHI and ISWC were well ahead in this aspect.

The impact of the different cases on farmer organizations was also scrutinised. Aspects of farmer organizations are missing in most of the cases studied. In most cases farmer groups are built by outsiders with no due consideration to existing structures. A close look at the relationships between farmer research groups, interest groups and community organization is necessary. A farmer organization should have a life of its own and organizational structure and should continue beyond project life or researcher intervention. It is concluded that research is not yet addressing farmer organizations adequately rather it is mainly using farmer research groups induced from outside. The projects that targeted the right categories of farmers were successful as farmers adopted the technologies. Good examples of this were AHI, ISWCS, PPB and COR-LK. Chances of scaling up/out technologies differed among projects. In the case studies ISWC project was excellent in this aspect as technologies were able to spread beyond the targeted areas.

Discussion

Participation of farmers and other stakeholders in projects within the agriculture sector in Tanzania is recognized as a requirement for adoption of project outcomes. However, experience gained shows that participatory methods being used differ throughout the country. This has been realized in a recent discussion on this topic with various researchers, farmers and members of different institutions ((AHI, 2003). Based on the nature of issues being addressed AHI, for example, recognizes the importance of involving partners with different skills (inter-disciplinary) and from different institutions (multi-institutional) in carrying out activities.

There are many experiences which can be learnt from the approach adopted by AHI. AHI's approach has the ability to build upon not only on farmers' knowledge but also on the experiences of many participants. It enables social customs and cultures of the participating communities remain intact which ensures adoptability of outcomes. Partners feel they own and have a share in responsibility. Besides focusing on resource poor, the approach allows flexible and collaborative exchanges among participants. There is clarity on who participates in what activities which enhances team spirit among researchers. Adoption is often high since farmers' capacity to analyze their constraints, to identify opportunities and mobilize the services they need is high.

AHI's approach is not without problems. Involvement of different stakeholders results in high operational costs (travel costs, perdiems etc). The long time it takes to establish committed multi-disciplinary teams and build confidence with farmers is the other shortcoming. It often happens that scientists become committed to other duties and AHI has to re-organize its timing of operations. The extractive nature of the process (too much data extraction from farmers demanding a lot of their time) versus the need to balance with tangible benefits e.g. provision of attractive technologies e.g. high value crops etc.

In the case of projects and institutions working under DRD, many participatory approaches are being practiced. They vary from weak to strong integration of disciplines as well as from weak to strong use of services and/or experts of other institutions. Experience gained indicates that knowledge available in the community is not sufficiently explored as not many farmers are reached. Farmers' capacity to analyze their constraints, to identify opportunities and mobilize the services needed is low. It has been found that working under government budgets limits institutions' capacity to involve many stakeholders.

Recent strategies by government encourage stakeholder participation in many activities in the agriculture sector (URT, 2001; URT, 2002). Private and community-based service providers will be increasingly needed, hence, future interventions may need to support the emergence of such private service providers, and remove possible constraints to their emergence. Strong linkages and synergies are being encouraged between the range of private and public agricultural service providers, for example among research, extension, information and communication, training and technical services. Grass-root level farmers' or community-based organizations and networks are being promoted and strengthened to become key development partners. This is because success of various projects depends entirely on the stakeholders' consent. Such consent can only be achieved as long as the respective institution meets the stakeholders" expectations by providing required services or commodities. In order to be aware of the stakeholders' needs, the respective research institution must work very closely with them and communicate regularly with a view to create better relationship and understanding between both sides. The truth is that current policy emphasis and trends will see stakeholders requiring better services from the respective institutions.

In order to harmonize the different participatory approaches used by different agricultural research projects and come up with a common framework on which the research system in the DRD will operate, several actions are needed to be taken. There is need to develop effective linkage and partnership among stakeholders. This can be achieved by holding joint planning and review meetings with stakeholders, defining roles among stakeholders (researchers, farmers, organizations, extension department etc.) and establish stakeholder inventory analysis and identification of partners in the project area. There must be a shared need and agreed strategy to integrate different participatory methods in agricultural research. Wide scale formation of farmer groups, farmer field schools (FFS) and farmers associations should be encouraged in order to strengthen stakeholder participation. A close look at the relationships between farmer research groups, interest groups and community organizations is necessary.

Conclusions

The approach adopted by AHI Lushoto team where researchers of different disciplines and from different institutes and farmers are involved in identification of research areas is seen as a practical example of effective participatory method. By accommodating farmers' ideas, social and cultural issues, this approach ensures

adoption of technologies generated. A call is hereby made for MAFS to integrate and harmonize the different participatory approaches for effective technology generation and dissemination in Tanzania.

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