

The challenges on out-scaling participatory methods in agricultural research

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Introduction

For the last decade or so, participatory research has become an attractive mechanism for conducting adaptive agricultural research. This is mainly motivated by the perception that closer association with resource-poor farmers in identifying the problem and involving them in research implementation presents greater chance of success and adoption of research outputs; hence, enhancing the impact of agricultural research. The advantage of participatory research is considered more prominent in, although not limited to, the adaptation of technologies that require local knowledge of the social, economic and biophysical environments or need high level of human capital or require cooperation of different stakeholders. Resource-poor households in the dry and marginalized areas who face complex biophysical and socioeconomic constraints have benefited less from the agricultural research successes, which led to the green revolution, compared to the farmers in well endowed environments. The result is high prevalence of poverty and malnutrition in the dry areas. However, there is potential to improve the welfare of these households through agricultural research and development. The development of participatory research approach and its application came from the necessity of reaching out these resource-poor farmers whom their participation in the research and development process is considered as key in bringing about a desirable change.

The application of participatory research is now pretty advanced. It has become a major mobilizing force for project funding. Many research and donor organizations are increasingly embracing the approach. A system-wide program of the CGIAR coordinating and spearheading participatory research and gender analysis activities (PRGA) has been established. The program runs two community of practice groups; participatory plant breeding and participatory natural resources management. Many methodological guidelines are available. The literature has also increased substantially. Numerous books and periodicals are produced. There are networks and interactive fora where members exchange ideas and information online. Information on the impacts of specific projects is made available.

These are significant developments. However, important questions remain, despite these achievements, there is no evidence that the participatory research movement has yet succeeded in significantly transforming how agriculture research and development are organized and implemented in the dry and marginal areas. In other words, participatory research and gender analysis has not been yet mainstreamed in the agricultural research systems in the dry and marginalized areas. The paper analyses

the factors that influence institutional changes that are favourable to out-scaling participatory research.

Purposes of participatory research

In order to understand how participatory research can be out-scaled and institutionalized it is important to first clarify what is the purpose of participatory research. The use of participatory research is often argued to have two main objectives, namely, functional or efficiency and empowerment or capacity building. In the functional objective, participation is used to make use of local knowledge, to better understand farmers' needs and to improve the effectiveness and efficiency of formal research (Probst, et al. 2000). In this case, participation is expected to increase research impact, by improving the relevance of the technology for users, reducing the research lag (development phase), shortening the adoption lag (early adoption) and increasing adoption speed. The empowerment or capacity building objective considers participation to be a means of enhancing local people's capacity for self-directed innovation development (Probst, et al. 2000). In this case participation is used as a way of fostering learning through practical experience and working together in all stages of the research process (planning, implementation, analysis and interpretation of results). This is considered a two-way learning process and leads to personal and professional development among local people and researchers. The expected outcomes of this objective are changes in attitudes, improved communication skills, management and organization capacity. In addition to gaining knowledge and skills through a learning process, this objective suggests that participation is a way of enhancing social change and equity through increased capacity in articulation and negotiation, leadership, collective action, as well as critical consciousness, and self-esteem among (marginalized) social groups (Probst, et al. 2000). Obviously these two objectives, although not mutually exclusive, require different levels of intensity in participation and different kinds of skills on the part of the change agents (researchers, extension agents, NGOs, etc). For instance, a participatory approach with functional objective will require a relatively modest level of participation that allows proper solicitation of farmers' views and their participation in the assessment of innovations presented. There are numerous tools available in the literature both in plant breeding and in natural resources management on how to do this effectively (Detailed sources of information on different tools and literature are available at the PRGA website <http://www.prgaprogram.org/index.php>, October 7, 2005). This can be conducted, for example, through participatory technology evaluation activities, farmers' crop variety evaluation and selection. But the capacity building and empowerment aims to support farmers to build their own capacities in collectively managing natural resources, conflict resolution, negotiation, articulation and communication of their needs to authorities, and even efficiently designing their own experiments and making recorded observations of processes and practices on which they can make their own assessment. This requires different level of involvement and capacity. It requires commitment and skills beyond tools for technology assessment and farmers feedback. It is important to clarify what kinds of objectives are set for a participatory research program as these will determine expected outcomes and impacts. Objectives of participatory research will also determine the strategy for out-scaling or institutionalizing it beyond current projects.

Factors that influence the out-scaling of PR

Clarity of expected outcomes

Participatory research certainly calls for additional resources to accommodate the intensive interaction with farmers. It involves greater coordination with different disciplines and stakeholders such as men and women farmers, farmer group leaders, extension staff, non-governmental organizations, government departments and development projects. These will increase the transaction costs. All these mean that participatory research is more resource-intensive than conventional approaches. But whether participatory program have been cost-effective and whether it has greater benefits that justify its costs depends on the clarity of the objectives of the program. Because the purpose of participatory research can be interpreted differently by different stakeholders the expected outcomes can be also interpreted differently. This makes impact assessment a difficult task. **Lilja et al. (2000??check)** pointed out that the high diversity of objectives and expected impacts attributed to participation make difficult the task to identify the most important impacts for assessment in relation to different stakeholders' interests. This difficulty in assessing the impact of participatory research can be a constraint to scaling it out to larger geographical area as well as to mainstreaming it as a standard practice of agricultural research organizations. Another cost related argument is that because the innovations generated by participatory research can be considered specific to the conditions under which they are developed and because of the high degree of heterogeneity of resource-poor households and their farming systems, technologies generated by participatory methods will have limited impacts. **Czech Conroy and Alistair Sutherland (year)** demonstrate that with certain conditions and through proper use of recommendation domain concept the potential number of beneficiary resource-poor households could be large. From another perspective, the main appeal of participatory research is its ability to cater for the heterogeneity of resource-poor farmers. Here again the objective of the participatory research is critical. It is stressed that the objective of adaptation trials, for example, is not as much taking measurements as it is about farmers opinions of the practicality of the idea with the most important result being the general progress of a group's learning (**R. John Petheram Institute for Land & Food Resources, University of Melbourne (year)**). These arguments indicate that the issues of cost effectiveness and impacts need clear objectives of a research participatory research program. This helps to identify which impacts to assess and will facilitate the institutionalization and out-scaling of participatory research.

Human capacity

Human capacity is a key to the institutionalization and out scaling of participatory research approaches. There is wide variation in skills and capacities among national programs in the Central & Western Asia and North Africa region. But the regional capacity can be generally described as low because of the very rate in which participatory research approach is implemented compared to other regions. The competences which are lacking include facilitation of multi-stakeholder processes, stakeholder analysis, process management, participatory priority setting, impact assessment and gender-focused analysis. Capacity building should still be a priority in promoting participatory research and gender analysis. This can be carried out through formal training combined with on-the-job training and informal mentoring in project settings.

However, lack of follow-up to formal capacity building can make the capacity building ineffective. Weak follow up of training has been perceived as concern in a recent survey conducted by ICARDA¹. (insert Ann as footnote) Without follow up it will be difficult for participants to translate what they have learned into good quality gender sensitive/equitable, participatory research processes. Often lack of adequate funding is cited as the lack of the follow-up. The need for follow-up has to be acknowledged from the beginning to ensure funding. Another point raised in the survey was that capacity-building needs to be more practice-oriented. It is critical that project plans include programmed and iterative local approach with training and mentoring. This allows opportunities to discuss and reflect on experiences as frequent and regular element of the process. Another way of supporting capacity building is to organize experience sharing workshops across practitioners in different projects.

Organizational framework

It is commonly agreed now that participatory research involves some kind of a learning process where farmers and researchers learn from the experiences and knowledge of the other. This process also requires that the institutions implementing participatory research also adopt organizational learning framework. This is defined by Dixon (1994, cited in Conroy and Sutherland (2004) as “a learning processes at all levels of the organization (individual, group or system level) that allows a continuous transformation of the organisation in a direction that is increasingly satisfying to its stakeholders”.

The contrast to this is a top-down approach which is prevalent in many agricultural research institutes. Participants of a facilitation workshop in a Punjab Province, Pakistan, considered that top-down culture which was prevalent throughout most project components as hindrance to the success of participation. This organizational learning process requires change in attitudes and practices at the organization level beyond one specific project. There are, however, examples, where organizational learning process is applied in national research systems in developing countries. One such case is a process initiated in Uganda, which was structured into three phases: a pilot phase focussing on developing the capacity of the zonal teams, a second phase on scaling-up the process within NARO and partner organizations and a third which aimed to scaling-up within the ASARECA region². However, this approach is not common among agricultural research institutions. This gap in intuitional evolution towards organizational learning framework contributes to the slow institutionalization of participatory research and it's out-scaling.

The challenge program for SS African program, although recognized the importance of research process and organizational impacts, did not consider that as one of the main outputs of the program, but a secondary, product of the program. This can be partly explained by the long-term nature of assessing organizational impacts, if any, of the program. In at least two ICARDA experiences, one in Syria and the other in Pakistan, workshop participants, when asked how participatory research can be mainstreamed, responded organizational support as the most important factor followed by increasing staff capacity and knowledge on participatory methods. ICARDA study of the

¹ This survey was conducted by a consultant Dr. Ann Braun for ICARDA and was supported by PRGA.

² This case has been reported in the workshop document: LEARNING TOGETHER FOR CHANGE IN INTEGRATED AGRICULTURAL RESEARCH FOR DEVELOPMENT (IAR4D) IN UGANDA, Volume I, Facilitation by: R. Hawkins, J. Hagmann, P. Kibwika, M.G. Nassuna-Musoke and R. Miiro; Documentation by: D. Akullo, P. Kibwika and Chris Opondo.

capacity needs for institutionalizing participatory research and gender analysis documented a number of constraints including: 1) the top-down culture in the region; 2) limited knowledge about participatory approaches among managers, researchers and extension staff; 3) disinterest or resistance among researchers and research assistants; 4) a transfer-of-technology culture; 5) compartmentalized organizational structures; and 6) lack of or weak NGO and civil societies.

The top down culture is reinforced by agricultural policies that still have tendencies of centrally planning economies. Agricultural policies and general policy attitudes also play a role in the development of participatory research methods. Policies that mandate production quotas on certain “strategic” crops prevail in a number of countries in the Central and Western Asia and North Africa region. These policies do not respect farmers’ rights to choose which crops to plant even these crops involve practices that are not environmentally sustainable (depletion of ground water, Stalinization of land, etc) and are economically inefficient. Agricultural research and development systems under such policy environment are unlikely to embrace research approaches where farmers are treated as partners in a learning process. In these cases the project-based participatory research is the only option.

Extension and civil society organizations

The Success of participation can be measured by the overall impact on the welfare of the resource-poor farmers who are not served very well by the conventional research approaches. And in order to be cost effective, the outreach of the approach should be out-scaled to large number of resource-poor households. There is a need not just to outscale the functional or efficiency outcomes of participation but also the capacity building or empowerment outcomes of participatory research approach. This clearly is a task beyond the capacity of research alone, even if researchers and research organizations have the right attitudes and required skills in participatory methods. In an ideal world, where effective extension service exists and civil society organizations operate, there could be clear division of labour where researchers focus on the development of innovations and extension and civil society organizations would focus on out-scaling and capacity building aspects of participation. This can be done seamlessly as one program without separation between partners. This requires mechanisms for facilitating multi-stakeholder processes in order to ensure coordinated decision-making and smooth flow of information and exchange of knowledge. The division of labour is essential for assigning tasks and responsibilities harnessing the different strengths of the partners participating in a program. But the real world is far from this ideal situation. Weak extension systems and lack of civil society organizations are the norm than the exception in the dry areas. This limits how participatory research can be out-scaled at national or regional scales. The low existence in civil societies and weakness extension services in many national agricultural systems in the Central & Western Asia and North Africa region is an obstacle to out-scaling and institutionalizing participatory research. The project-based experiences of participatory research have been successful in mobilizing resources and have shown good results³. But weak extension and civil society remains a major critical institutional gap that affects the institutionalization and out-scaling of participatory research. In Central Asia extension systems are the weakest and civil society organizations, with few exceptions, have not yet emerged. As a result application of participatory approach in agricultural research and development is still project-based and the experiences are limited.

Coordination

³ Example of these successful cases is the participatory barley breeding which is now adopted by several national programs. Another example is the application of Integrated Natural Resources Management now applied in several projects in Iran and Morocco, for example.

When reasonable number and types of different organizations are involved in a project using participatory methods, still coordination of these could be problematic. This is certainly not unique to participatory research but in development in general as **Lloyd-Laney (2003)** points out that at every level, better co-ordination of information generation and dissemination is being recognised as necessary to achieving development objectives. But because the modern understanding of participatory research encompasses multiple objectives which calls for the involvement of a number of stakeholders, coordination becomes particularly critical.

There are numerous inter-and intra-institutional barriers as was found in Pakistan in a project in the Dry areas of Punjab Province. In this project, the task of coordinating among provincial research institutes, national research institutes, project's development components including those forming and supporting community organizations and providing microfinance to women, and ministry departments who all have a stake in the project was not easy. Participants on facilitation workshop identified effective coordination of this multi-stakeholder process as critical to the success of the project. In the same workshop participants recognized the need for their attendance of the monthly community organization meetings where community development priorities are discussed. ICARDA survey of researcher at ICARDA and different NARS partners revealed that many researchers would like to see more integration occurring across disciplines, projects and with other actors including national programs, NGOs and the private sector. Lack of coordination means inefficiency and that necessary information is not getting to the people whose lives it should be benefiting. This affects the impact of programs. But effective coordination means that the skills such as facilitation of multi-stakeholder processes should be available among the partners. Projects involved in participatory research with multiple partners need to recognize this from the outset and include it in the implementation plan with adequate allocation of funds.

Rural infrastructure and services

Farmers in the dry areas face both environmental and socioeconomic condition that make the incidence of poverty relatively high. There are, however, many promising technological options available. But in most cases, simple selection of technological options is not sufficient to ensure adoption. Out-scaling the impact of these technological options requires functioning institutions. Development of local institutions, rural infrastructure, enterprise linkages, microfinance, insurance, farmer-interest groups and other institutional innovations are essential to out-scale the diffusion of these promising technologies.

The main appeal of farmer participation in agricultural research and development is its ability to reach out resource-poor farmers and mobilize their knowledge, skills and experiences to enhance their interactions with formal research for solving problems that affect their livelihoods. The characteristic of resource-poor farmers, particularly in the dry areas, is that they live in environments which lack essential services such as water supply, health service and access to markets (commodity and input markets and financial markets, for example). A reality that confronts any participatory research practitioner is this general underdevelopment which negatively affects the welfare of resource-poor households as well as their immediate priorities. Because of this general lack of infrastructure and services, the ability to effectively implement participatory research is hampered.

Under these circumstances farmers may not see agricultural research as their top priority. This was the case in communities in the Yemeni mountains, where it turned out that farmers had agreed to discuss agricultural research problems only after a consensus was reached that their water shortage problem will be included in the agenda. Water supply particularly in the dry season was an acute problem. This required water supply development which the community was very keen. Participatory research projects in such areas could be more successful if they work in cooperation with development projects in the area that can address some of these immediate development issues.

Here it is important to note that poor infrastructure and lack of rural services is a reality in many dry areas and marginalized environments and it is something that practitioners have to develop strategies for successful participatory research. One such strategy is to form alliances with development organizations that can address the immediate needs of the population while research focuses on the task of generating and adapting agricultural innovations. But working with development projects requires the development of good partnership with clear expectations and roles, if they had to be successful. Again such alliance building requires skills and attitudes which traditional research organizations do not have. The need and commitment to have impact on resource-poor households through client responsive and participatory research approaches is creating the demand for such skills.

Funding

A major factor influencing the spread of participatory methods in agricultural research and development is funding. The rise in the number of projects which include participatory methods is a clear indication of that influence. There are many good examples of successful projects applying participatory research approach in the dry areas and their number is increasing. In the long run it is plausible to assume that the knowledge and capacities gained from these projects will reach a critical level that will bring about essential organizational changes that are favourable to participatory research and gender analysis. In other words these project-based PR activities will eventually contribute to an institutional evolution towards an impact-oriented, client-responsive agricultural research system. But the rise in the project-based participatory research activities has not so far brought this organizational change. One main reason is that projects are often designed for a short term and they are problem oriented. Projects that address organizational change and issues of structure and capacities at the institutional level are rare. It is likely that with out additional resources that tackle the organization and capacity building issues the effects of short-term project-based funding of participatory research will not be sustained.

Conclusion

The participatory research movement has made great strides in promoting more conscious research program where the ultimate users of innovations are involved and participate in the development of innovations. There are numerous cases that measure the impacts of participatory research. Whether the participatory research movement will succeed in transforming the agricultural research systems in a way that the approach is institutionalized and its results are out-scaled to larger number of beneficiaries has yet to be determined. Some of the factors that influence this wider intuitional impact include: (1) clarity of purpose and expected outcomes which helps to better assess and articulate program impacts, (2) human capacity both in participatory techniques and in process management and facilitation skills, (3) organizational framework that is favourable to a participatory learning process at the institutional level, (4) the state of extension services and civil societies which compliment research with a strong multiplier effect when working in partnership with research, (5) coordination and facilitation of multi-stakeholder processes and finally (6) rural infrastructure and services without which the impact of agricultural innovations on the rural poor can be undermined. Some of the constraints to outscaling participatory methods in agricultural R&D that are raised in this paper are similar to the difficulties that face scaling up community-driven development. These difficulties include high costs, hostile institutional setting, difficulties in cooperation of different stakeholders, and lack of scaling-up logistics such as training of large number of participants (Binswager and Aiyar, 2003).

Research administrators should consider these factors in order to promote environment that is favourable to participatory research. They should also seriously consider farmer participation in research priority setting and revise established program mandates as necessary. Donors should consider the effects of short-term funding on the implementation of participatory research projects which requires substantial amount of time to be spent,

at least in the beginning, on building relationships and alliances both between farmers and researchers and among other stakeholders in the process. These considerations can accelerate the use of participatory approaches in agricultural research and development.

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