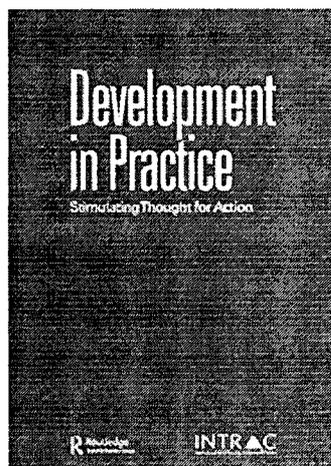


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Empowering farmers? Collaborative research at Sokoine University of Agriculture, Tanzania

Dismas Lyegendili Mwaseba*, Randi Kaarhus, Fred H. Johnsen, Amon Zacharia Mattee, Zebedayo Samwel Kayanda Mvena, and Lars Olav Eik

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This article presents experiences with collaborative and on-farm research based on the implementation of a four-year Programme for Agricultural and Natural Resources Transformation for Improved Livelihoods (PANTIL) at Sokoine University of Agriculture (SUA) in Morogoro, Tanzania. It outlines the basic elements in the implementation of a programme aimed to be demand-based, and discusses the challenges encountered in combining collaborative research with the empowerment of farmers. Finally, the article draws out some lessons with implications for the future organisation of collaborative and on-farm agricultural research.

Cet article présente des expériences de recherches menées en collaboration et au sein même d'exploitations agricoles, basées sur la mise en oeuvre d'un programme de quatre ans, le *Programme for Agricultural and Natural Resources Transformation for Improved Livelihoods* (PANTIL - Programme pour la transformation des ressources agricoles et naturelles pour des moyens de subsistance améliorés) à la Sokoine University of Agriculture (SUA) de Morogoro, en Tanzanie. Il présente les éléments de base de la mise en oeuvre d'un programme visant à être fondé sur la demande et traite des défis rencontrés au moment de conjuguer les recherches collaboratives et l'autonomisation des agriculteurs. Enfin, cet article tire quelques enseignements ayant des implications pour l'organisation future de recherches agricoles menées en collaboration et au sein des exploitations.

El presente artículo examina las experiencias surgidas de una investigación colaborativa realizada en parcelas agrícolas. La misma se basó en la implementación del Programa para la Transformación de la Agricultura y de los Recursos Naturales para el Mejoramiento de los Medios de Vida (PANTIL, por sus siglas en inglés), vinculado a la Universidad Sokoine de Agricultura de Morogoro, Tanzania, a lo largo de cuatro años. El artículo resume los elementos principales requeridos para impulsar un programa basado en la demanda, examinando los retos que debieron enfrentarse para combinar la investigación colaborativa y el empoderamiento de los productores. A manera de conclusión, el artículo esboza algunos de los aprendizajes obtenidos, los cuales tienen implicaciones para la organización de futuras investigaciones colaborativas que se realicen en parcelas agrícolas.

Keywords: Civil society – NGOs, Participation, Partnership; Environment (built and natural) – Agriculture; Sub-Saharan Africa

Introduction

Experience with agricultural research and development (R&D) in the 1960s and 1970s showed that the conventional transfer of technology model of agricultural R&D, on which agricultural

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transformation in the developed world as well as some parts of Latin America and Asia heavily depended, did not bring about the expected results in sub-Saharan Africa. The reason seemed to be that the technologies recommended for use by small-scale farmers as a result of agricultural research were, in general, inappropriate to their priorities and circumstances (Richards 1985; Collinson 2000). Based on experience in West Africa, Richards held that: “*Few textbook solutions to agricultural development problems seemed relevant or feasible given the realities of the farms ...*” (1985, 9). It was believed that this obstacle could be overcome through “*a better understanding of small farmers and the way they make decisions*” (Collinson 2000, 2). In this context farming systems research (FSR) emerged – to which “extension” was later added, with the approach becoming known as FSRE. The FSRE approach represented an innovation in comparison to the conventional approach for generating technology, in the sense that it aimed to be particularly relevant to the priority needs of the smallholder farmers. In this regard, the turn to farming systems research – which accommodated on-farm research – can be seen as “*an early effort to bridge the gap between the needs and capacities of small, resource-poor farmers and publicly funded agricultural research establishments*” (Collinson 2000, 2).

Despite the fact that various approaches to agricultural research have evolved over the past 40 years, on-farm research has remained a core element of agricultural research within the framework of what is generally referred to as participatory agricultural research. In practice, however, the participation of farmers in the research process was not a key issue within FSRE. This in part explains its abandonment in favour of other approaches, including farmer participatory research (FPR) and participatory technology development (PTD), which emerged during the 1980s and 1990s (Conroy and Sutherland 2004).¹ A critical issue in the emerging participatory approaches was however not on-farm research per se but rather the participation of farmers in different types of appraisals, projects, and programmes.

Since the 1990s farmer participation in agricultural research, whether through FPR or PTD, had been widely advocated and adopted by the various national agricultural research systems (NARSs) in most developing countries, including Tanzania. Sokoine University of Agriculture (SUA), with a national mandate within the Tanzanian NARS, has also embraced collaborative on-farm research in its research programmes.² Since its establishment in 1984, SUA has implemented various research projects and programmes with an on-farm research component. These include the Tanzania Agricultural Research Project Phase II (TARP II-SUA), Future Opportunities and Challenges for Agricultural Learning (FOCAL), and the just concluded Programme for Agricultural and Natural Resources Transformation for Improved Livelihoods (PANTIL).³ In PANTIL in particular, *empowerment* was further set out as one of the main cross-cutting objectives.

In this article, the implementation of the research and farmer empowerment part of the PANTIL Programme, starting in 2006, is examined, with particular attention paid to the methodology used and challenges encountered. Some of the lessons learnt in the course of implementation of the programme are also drawn out. We start with a brief presentation of the theoretical context underlying the concepts of farmer participation, as well as farmer empowerment in agricultural research.

Farmer participation in agricultural research

Even though participatory agricultural research involves stakeholders other than farmers, such as researchers and extension staff, *farmer* participation in agricultural research is of particular interest among scholars and practitioners in R&D. The justification for farmer participation in agricultural research has various sources. Among these is the argument that “*experimenting is part of farming as much as tilling the soil (and) planting seeds ...*” (Haverkort 1991, 3), and

that involving users or clients in participatory R&D is a principle for successful innovation (Ashby and Sperling 1994). It has also been claimed that adopting such an approach will result in the development and transfer of the technology of their choice (Ashby et al. 1995); and takes “*advantage of farmer skills to innovate*” (Ortiz et al. 2011, 523). Generally, according to Holland and Blackburn (1998, 2), “*participatory research is able to make space for local voices to be heard*”.

There are several typologies and forms of participation mentioned in the literature.⁴ Farmer Participatory Research (FPR) is understood by many to be one element of a larger participatory development agenda that goes beyond the generation, testing, and dissemination of technologies, as it aims “*to change the orientation of existing research and development structures, develop a sustainable, community-based research capability, and create new social and political institutions*” (Okali, Sumberg, and Farrington 1994). At the same time, it has not been easy for mainstream R&D organisations to acknowledge farmers’ role as technology developers in their own right (Haverkort 1991). This is despite claims by researchers that they base their work on elaborate assessments of farmers’ perceptions of constraints, and in spite of on-farm research and farmer-first rhetoric in extension. At the centre of the complex relations involved in collaborative and on-farm research are the issues of both power imbalances and empowerment ambitions, as these relate to the participation of farmers in agricultural research.

The concept of participation in development can be said to have received a largely uncritical acceptance when it first emerged in the 1970s, and continuing throughout the 1980s and early 1990s. What we may see as an uncritical promotion of farmer participation in agricultural research and development is reflected in *Rural Development: Putting the Last First* by Robert Chambers (1983) and *Farmer First* (Chambers, Pacey, and Thrupp 1989). It was only towards the mid-1990s that more critical questions emerged, for example, when Scoones and Thompson (1994), in response to *Farmer First*, came up with *Beyond Farmer First*, questioning what they saw as a problematic populist perspective espoused by, among others, Robert Chambers. Others such as Molhan and Stokke (2000) see the obvious problem of this perspective as “*the tendency to essentialise and romanticise ‘the local’*”, which downplays local social inequalities and power relations. It is against this background that since the 1990s the focus of debates has turned to *empowerment*,⁵ and a growing body of critical literature on the subject has developed (see for example, Alsop, Bertelsen, and Holland 2006; Batliwala 2007; Luttrell et al. 2009).

Essentially there exist two major perspectives of empowerment with different operational implications: the “instrumentalist” and the “transformative” perspective. The instrumentalist perspective focuses on the *process* of empowerment; on empowerment as a means towards other ends. In practice, this perspective is translated into organisational capacity building or into activities that aim to increase the participation of previously excluded groups in the design, management, and evaluation of development activities. On the other hand, the transformative perspective of empowerment puts emphasis on the *outcome* of empowerment, questioning “*the way in which participation alone can be empowering without attention to outcomes*” (Luttrell et al. 2009, 3). In the operationalisation of such a transformative perspective, economic enhancement and increasing access to economic resources often become central elements of empowerment, in addition to challenging existing – disempowering – power structures.

At another level is the categorisation of power, which in this context can be of both analytical and practical use. In practice, however, according to Luttrell et al. (2009), the issue is whether *change* is brought about or constrained by forces or structures beyond people’s control (e.g. class, religion) or through individual and collective action (agency). Again, as is the case with the perspectives of empowerment, the position taken in the “agency” versus “structure” debate has implications for how empowerment is initiated or supported. An agency perspective

implies that people as individuals have potential for a greater capacity to act freely and consciously and thus bring about change. On the other hand, it is argued that social systems to a great extent constrain, or even determine, the actions of individuals. And there are those who take a different view, rejecting the dichotomy of “agency” and “structure”, and holding that structure and agency are complementary and dynamic forces: structure influences human behaviour, and humans are capable of changing the social structure they inhabit (see Luttrell et al. 2009). That is, if they are empowered to do so.

PANTIL programme

Objectives and design of the programme

PANTIL was designed to improve the livelihoods of rural people through training, research, and outreach activities. The programme also aimed at creating a basis for an agricultural and natural resource research and outreach system that addresses the needs of the farming communities and opens new opportunities for them. The main – and highly ambitious – goal of this programme was to contribute towards attaining increased economic growth, reduce poverty, and improve social well-being in Tanzania through transformation of the agricultural and natural resource sectors (PANTIL 2005). The programme started with a call for research proposals in the second half of 2005. It became operational in January 2006 and came to an end in June 2010.

Farmer empowerment formed an important agenda in PANTIL. In the context of PANTIL, farmer empowerment was conceptualised in terms of enhancing farmers’ capacity to articulate demand for relevant knowledge, appropriate technologies and information in order to improve productivity and profitability, and contribute to increased incomes and reduced poverty. According to the programme design, empowerment of farmers was to be done through various mechanisms including conducting several types of training; supporting farmer exchange visits, farmer forums and agricultural shows, and production and dissemination of extension materials (PANTIL 2005). Thus the overall perspective on empowerment being expressed in the definition of these mechanisms implies a focus on agency. With the programme providing access to new knowledge, farmers’ capacity to make informed choices would increase – that is, in the particular fields defined by the different projects; and farmers would thus be enabled to act consciously to bring about positive changes in their own livelihood situations.

Selection of projects and collaborators

In order to qualify for funding under PANTIL, first a concept note, then a full research proposal had to be developed under the leadership of a SUA researcher, including one or more research collaborators from Norwegian institutions. The researchers were required to produce evidence of proposals being *demand-driven*. In addition, the selection of project proposals for funding under the programme was guided by various criteria including gender considerations, sustainability, and multidisciplinary of research teams. Appointed reviewers screened the concept notes, and only those that complied with the criteria set out in the programme document were approved, and the respective researchers asked to develop full proposals. The next stage of evaluation involved the review of about 50 full proposals, after which 11 projects covering a wide range of themes were approved for funding (PANTIL 2009).⁶ Table 1 gives a sense of range of themes covered by the 11 projects.

For these new projects, in most cases research teams selected research sites after consulting with district authorities including the District Agricultural and Livestock Development Officers and District Extension Officers. Then the team would have a meeting with the village authorities in the selected villages, including Village Chairperson and Village Executive Officer, as well as

Table 1. List of PANTIL projects.

	Short name of project
1	Vanilla Production
2	Draught Animal Power
3	Rainwater Harvesting and Irrigation
4	Striga Control
5	Cassava Processing and Marketing
6	Nutrition Interventions
7	Integrated Dairy Production Systems
8	Dairy Goats
9	Improvement of Banana Production
10	Reducing Farmer-Pastoralist Conflicts
11	Graduate Entrepreneurs

members of the Village Executive Committee. In this meeting the village authorities were informed about the proposed research project and – what would in practice be – the team’s decision to work with local people and implement the project in their village.

Implementation of collaborative research

At a later stage, researchers would usually inform community members about the research project at a public village meeting. Here members for the participating farmer groups in the project were in some cases selected, seeking representation of women and men, as well as different hamlets in the village. In other cases, village authorities would appoint the participants to form the farmer groups, based on their overall knowledge of local people – in addition to other more discretionary criteria. Since groups thus established were usually new, training to strengthen leadership knowledge and skills among group leaders and members was offered and carried out by an “empowerment team” formed under the PANTIL programme. These training activities, which covered topics such as group dynamics, project planning, and elementary book keeping, aimed at organisational empowerment to enable groups to perform effectively (Hennink et al. 2012). They were thus intended to concretise the defined empowerment “mechanism” of strengthening farmer organisation set out in the PANTIL programme design.

Conducting on-farm experiments

For crop-based research (e.g. vanilla, banana), plots of land to conduct trials were obtained in various ways. In some cases village leaders provided plots. In other cases a group member offered a piece of land for the field experiments, or members raised funds and purchased land for the project. In conducting the trials, the banana project was among those that used a farmer field school (FFS) approach. This approach can be seen as further development in on-farm research as promoted from the 1970s and 1980s onwards, where the objective is that farmers and researchers work and learn together on one or more FFS plots (*shamba darasa* in Kiswahili). After carrying out trials on these plots during the first season, each FFS group member is expected to carry out similar trials in his/her own plot in the succeeding season, or alternatively parallel to the *shamba darasa* trials. The FFS plot is also meant to serve as a *research-cum-demonstration* plot for non-group farmers. At the same time, the participating farmers’ own experiments, especially if considered successful, are expected to evoke interest among other family members and neighbours. If they, in turn, are able to adapt key elements in the trials in their own fields, it would have the desired scaling-out effect.

Experience-based learning

The Nutrition Interventions project under PANTIL aimed to increase the nutritional value of food consumed in the selected project villages, but based on the resources that were already available locally and at household levels. This project had an approach similar to FFS in terms of building on experience-based learning. In the local settings where this project was implemented, traditional cultural conceptions do not establish any clear causal link between the nutritional contents of food and individuals' health. Local food culture is more concerned with the social relationships communicated through food and eating than with food as nutrition (Ohna, Kaarhus, and Kinabo 2012). The main objective of this project was to provide people in two selected communities with science-based knowledge on how nutrition affects health through experience-based learning; and in addition provide practical skills in how to prepare locally available food into more nutritious meals, and thus improve well-being through better use of existing resources. The project sought to provide the participating farming households with individual experiences of how more nutritious food could improve their own health situation. Project staff would accompany the individual participants' experiences by closely monitoring the health situation of each participant through periodic tests, including blood samples. In this sense, the project was designed as an on-site nutrition experiment.

Empowerment objectives and challenges encountered

Collaboration and participation of stakeholders were considered key elements in the research process under PANTIL. Although the two elements are closely related, collaboration logically precedes participation. In other words, participation can only take place once stakeholders agree to collaborate and create a favourable environment for planned and systematic interaction. According to the project document, in the context of PANTIL, the key stakeholders of the programme were Tanzanian (and Norwegian) researchers, local farmers, NGOs, local government authorities (LGAs), and village level extension staff (PANTIL 2005). From an empowerment perspective, however, the planned collaborative research encountered various challenges in the course of implementation. The challenges did in part derive from a modality that required researchers to work with groups of farmers, while in practice relying on field-based extension staff or other trained facilitators for continuous follow-up of project activities. The design of the empowerment component of the programme did not really address the challenges involved in managing these larger collaboration networks. In what follows, we examine a few of these challenges, drawing on experiences from some of the projects. Thus our account is not meant to be fully representative of either successes or challenges in empowering farmers under the PANTIL programme. What we present here is intended as a critical discussion, not at all as an evaluation.

Working with groups, but which groups?

In principle, as reported earlier, PANTIL researchers were required to work with groups of farmers. However, this raised challenges of its own. At an empowerment workshop organised in 2006, PANTIL researchers had already discussed some inherent dilemmas in selecting participating farmer groups. On the one hand, the government structures in Tanzania make it necessary to go through the local government authorities to access farmers in rural communities, and LGAs are also able to facilitate contacts and mobilise local people. On the other hand, local village leaders, extension agents, and other intermediaries will often have their own agendas – in addition to that of facilitating collaborative research. They might propose members from their own extended family or people who are part of their own power network in, for instance, the selection of members to the participating farmer groups. As experienced in many African countries such groups end up being dominated by

the “non-poor” farmers, especially where there are immediate benefits to be gained and the group formation process is open and guided by community leaders (see Friis-Hansen 2008).

In one project site, where the Integrated Dairy Production Systems project had decided to implement their project, there was already a farmer group which had been formed under a previous project – the introduction of dairy cattle through Heifer Project International. The group was well organised, had good relationships with LGAs, and the farmers were able to articulate their problems and demands – that is, assistance in dealing with disease control and improved nutrition for cattle to increase dairy production. The researchers involved in the project furthermore had the required research competence and capacity to address these demands. Should the researchers from SUA in this case just go on working with this group, and in so doing, limit participation to those who had benefited from project interventions before? Or should they try to organise a new group of farmers who had not directly benefited from the previous project? The researchers had initially planned to form their own groups, but would in response to farmers’ demands end up working with the already well-organised groups of farmers.

Role of extension staff/facilitators as channels of communication

Generally, in collaborative on-farm research we found that it was often the researchers – as sources or initiators of the interventions – who were also the most active participants. Public extension agents and other local government staff primarily acted as means or channels of communication between the researchers and the farmers. In the Nutrition Interventions project, for example, this role was mainly performed by a team of young facilitators formed as part of the project after undergoing technical training in nutrition. In any case, the groups of participating farmers as key participants and the ultimate beneficiaries of the projects to a large extent depended on messages from researchers relayed to them through extension staff or facilitators. However, since messages in collaborative research projects were not simply straightforward and top-down orders, they often required interpretation skills and horizons of understanding which were not necessarily shared by all farmer group participants or villagers in general.

Different projects tried in different ways to deal with a key issue in this regard, especially from an empowerment perspective. What should be the main priority: providing farmers with new knowledge and skills through collaborative on-site research (implying an agency perspective)? Or creating conditions that would enable local farmers to use new knowledge and skills to improve their lives (i.e. placing more emphasis on structure)? The first involves a stronger focus on knowledge generation, the other on local context and facilitation. Striking the right balance remained a challenge in several projects. One of the projects that did place quite a lot of emphasis on local context and facilitation was the Nutrition Interventions. But even in cases where communication between researchers and farmer groups was facilitated by a team trained and established for this purpose, it did not mean that communication problems and misunderstandings were removed from the scene.

Carrying out a brief study associated with the Dairy Goat project, Husum (2009) found that power relations among the actors were to a large extent determined by information flow and control. She also observed that farmers often felt an uneasy dependence on the project intermediaries, including extension staff. From the farmers’ perspective, the intermediaries acted as “gatekeepers”, and in this position not only had control over technical information on dairy goat production, but also controlled crucial market information. In this project, crossbred goats with high milking potential had been introduced to selected farmers in the project villages at an earlier stage. The project objectives were both to increase household income through sale of goat products, and to improve the nutritional status of household members through consumption of goat milk. At this stage a market for the offspring of the goats had emerged, and goat kids were

in high demand far beyond the project villages. In this situation, market information was becoming increasingly important both for farmers who had kids for sale and for farmers who needed to make decisions on how to manage their “goat capital”. When intermediaries were perceived as gatekeepers controlling important information, many farmers found themselves in a situation where increasing incomes from goats was part of a package involving a problematic dependence on the intermediaries. Thus in terms of empowerment, their experience was rather mixed.

To understand the intermediaries’ perspective, we collected some data in one of the villages where the Nutrition Interventions project was implemented. We found that when young villagers assumed a role as members of a team of nutrition facilitators, they did not see themselves only as channels of communication of knowledge and information between the researchers and the local farmers participating in the project. Some of them rather saw the “university training” in nutrition as a step (or stepping stone) in their individual careers towards paid employment – which failed to materialise, at least in the short run. Their hopes and expectations also lay beyond project objectives. Therefore they would not be particularly motivated to “get lost in translation” of local suspicions and misunderstandings to the researchers in the project team. In this case the Nutrition Interventions project was introduced into a local setting where health, nutritious food, and above all blood samples were closely associated with the looming threats of HIV/AIDS among the villagers. As participants in the project, members of the selected farmer group tended to be looked upon by other villagers as – probably – infected by HIV. The series of health tests which were designed to be part of the experience-based learning within the farmer group, also led the participants to expect the results of testing being communicated about their individual status in this regard. This was never part of the project objectives, nor part of the testing, and thus never communicated back to the participants. Still, expectations lingered on among at least some of the participants in the group, who held that they were “*never properly informed*”, while others – some hesitatingly – accepted that the project was actually (only) about general nutrition information. A more general observation is, however, that the projects had not established more formal mechanisms of accountability (Kilby 2005), where the local participants could express their concerns, where suspicions could be brought into the open and misunderstandings more systematically rectified.

We found that when the participants in the farmer groups agreed to be part of the collaborative research project, in many cases they did so without really knowing what it was all about. As a “project” it would be expected to provide access to at least some resources or assets – and often one type of assets can be converted to other types of assets, which at any given time are prioritised by individuals or households participating in a project (see Holland and Blackburn 1998). In the start-up phase of a project, acquiring access to its assets or other resources is often considered important and serves as an incentive for participation in the project. It is therefore not surprising that when expectations of accessing, for example, free inputs such as seeds were not met, some decided to drop out. In fact, some groups experienced high drop-out rates, in some cases reaching up to half of the farmer group members. Similar experiences reported elsewhere (Sanginga, Tumwine, and Lilja 2006; Friis-Hansen 2008). Ortiz et al. (2011) have further discussed incentives and disincentives related to farmers’ involvement in research. They found that the perceived benefits – *cum* incentives – included the possibility to strengthen human capital (knowledge), accessing new technologies, and strengthening their own organisation. In contrast, the need to invest their scarce time in participatory research was considered a disincentive for the farmers to participate in such research.

Thus what we see is that farmers’ participation in a collaborative research projects will often be motivated, and conditioned, by their situation of looming scarcity with regard to the key assets needed to sustain and develop their livelihoods.

Empowerment interventions, agency, and results

Although empowerment featured as an aim of PANTIL, empowerment interventions such as exchange visits, farmer forums, and training were largely implemented parallel to projects' on-farm research. Moreover, the focus was placed more on provision of information and knowledge (e.g. about nutrition, dairy production and processing, new agronomic practices) and skills development through training related to various technologies introduced. On the one hand, we can say that in this way the programme sought to strengthen participants' capacity for agency, and thus their opportunities to improve their livelihoods through better informed choices on the use of available resources and the use of new knowledge and improved technologies. Looked at more critically, the empowerment approach under PANTIL was essentially informed by an instrumentalist perspective of empowerment. The rationale behind it was that through empowerment arenas such as farmer forums and farmer exchange visits, participating farmers would become exposed to various opportunities, and as a consequence be able to take initiatives to acquire necessary resources for improving their livelihoods. However, this often turned out not to be the case, since in day-to-day interactions with participating farmers, the issue of limited resources to invest in farming or recommended technologies came up time and again. Elsewhere it has been shown that individual empowerment is not achieved through focusing on agency alone, but that knowledge and the presence of an enabling environment for change together serve as a mechanism to bring about empowerment (Hennink et al. 2012). Likewise, an enabling environment, say in terms of improved access to economic resources, may turn out to be a necessary, but not a sufficient condition for empowerment, as illustrated by our example from the goats project. Furthermore, according to Alsop, Bertelsen, and Holland (2006), effective realisation of choices by an actor (agency) – which may be enhanced through knowledge dissemination and training – will largely depend upon the institutional context within which the actor works.

Thirty years ago, Richards (1985, 39) concluded that few projects were “*capable of gaining and sustaining the interest of dedicated farmers*”. He further pointed out the need to involve farmers directly in problem formulation in collaborative projects (1985, 117). Still, as researchers we tend to work with the tacit assumption that even in “participatory” and empowerment-oriented on-farm research the scientist must, somehow, be in charge. Using Biggs's (1989) terminology, to move from a “consultative” to a “collaborative” – or even “collegial” – role for African farmers in agricultural research, still seems too risky for most researchers. In fact, as researchers we have our own priorities and there are requirements to account for project results according to plans and funding conditions. Meanwhile, farmers continue to struggle with, and build competence in, how to cope with “*complex interactions of unscheduled events*” (Richards 1985, 143). This competence has in many localities increasingly come to include identifying opportunities and potential benefits in upcoming projects. But also opting out when expected results fail to materialise within the farmers' own horizons of time and labour, and what farmers consider necessary resources and conditions for participating in research activities.

Lessons learnt

There are several lessons emanating from the experiences with collaborative and on-farm research under PANTIL. These can be summarised as follows:

- (1) Active participation of farmers in on-farm research cannot be achieved in a situation where decisions on ongoing research activities are exclusively taken by researchers. This situation not only inhibits innovativeness among the participating farmers but also institutional growth and development of the established farmer groups. There is

therefore a need for researchers to create an environment that allows farmers, and especially existing groups of farmers, themselves to formulate research problems and take leadership in implementation of planned research activities.

- (2) Even though capacity building involving training and institutional strengthening of farmer groups are important for enhancing farmer empowerment they are, by themselves, inadequate to achieve empowerment of farmers in a situation where farmers either individually or collectively continue to face structural constraints such as limited access to credit that impair their ability to make use of technologies generated by research, as well as inadequate output markets and market information. In this situation, efforts must be made to ensure that empowerment interventions address, among others, financial empowerment such as provision of credit facilities to farmers, in addition to assistance in accessing reliable markets and transparent market information. This would require researchers to work more strategically with relevant institutions at the level of LGAs and NGOs, but also private companies.
- (3) Extension staff and local facilitation teams serving the role of intermediaries in the flow of information between researchers and participating farmers might perpetuate dependency rather than enhance farmer empowerment through their control of technical information related to interventions, as well as other key information in the relationship between researchers and participating farmers. More formal and informal arenas where researchers and other collaborating partners interact, and researchers account for development in the project to the participating farmers, while the farmers account for their challenges and concerns, need to be included as a further mechanism to promote more open two-way communication and avoid unnecessary suspicions and misunderstandings.

Conclusion

Although farmer empowerment formed part of the agenda of PANTIL, it was not systematically integrated with on-farm research. This meant that specific empowerment interventions did not necessarily help address emerging and demand-based empowerment needs, leading some researchers to raise the question: what if farmers' demands are other than what you can offer – after your research project has been approved? The focus on capacity building-based empowerment interventions in PANTIL also underplayed the constraining effects of existing economic and structural power relations on farmer empowerment. Examination of the critical role played by extension staff and facilitators as intermediaries in collaborative research also demands further attention among researchers.

Can we on this basis, and with the lessons we have learnt, conclude, as Paul Richards did 30 years ago (1985, 162), that a farmer-focused decentralised approach to research and development in agriculture is still an option worth serious consideration? We would say: yes. If the necessary conditions and elements come together in a continuous process of revising, improving, and further developing both intervention and communication strategies – aiming to meet farmers' own demands for poverty reduction and improved livelihoods. But this will still require critical reflections and open debate on farmer empowerment and power imbalances in future agricultural research and development initiatives.

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Notes

1. In fact, a strong movement behind farmer participation in research emerged during this period (see Rhoades and Booth 1982; Chambers and Ghildyal 1985; Chambers, Pacey, and Thrupp 1989; Haverkort 1991; Cornwall, Guijt, and Welbourn 1994).
2. The mission of SUA, based on the University Act is: teaching and transmission of knowledge; conducting research; outreach and extension activities; and national disposition of agricultural information.
3. These programmes have been carried out mostly with the financial support of the Norwegian Government and in collaboration with Norwegian institutions, especially the Norwegian University of Life Sciences (UMB) - now NMBU, which also includes the Norwegian School of Veterinary Sciences.
4. For example, see Biggs's (1989) typology of participatory research.

5. See Mwaseba et al. (2009), for operationalisation of farmer empowerment in selected projects in Tanzania.
6. The earlier, but still operative FOCAL Programme, had 12 projects running, adding up to a total portfolio of 23 projects under the PANTIL heading.

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