NJAS - Wageningen Journal of Life Sciences xxx (2017) xxx–xxx

Contents lists available at ScienceDirect

NJAS - Wageningen Journal of Life Sciences

journal homepage: www.elsevier.com/locate/njas

Research paper

Adaptive Research with and without a Learning Alliance in Myanmar: Differences in learning process and agenda for participatory research

Rica Joy Flor[a,b,*], Harro Maat[a], Cees Leeuwis[a], Grant Singleton[b], Martin Gummert[b]

[a] Knowledge, Technology and Innovation Group, Wageningen University, 6706 KN, Hollandseweg 1, Wageningen, The Netherlands
[b] International Rice Research Institute, DAPO Box 777, Metro Manila, Philippines

ARTICLE INFO

Article history:
Received 8 April 2016
Received in revised form 27 February 2017
Accepted 21 March 2017
Available online xxx

Keywords:
Adaptive Research
Learning Alliance
Myanmar
Learning
Outcomes
Technology

ABSTRACT

The main challenge for researchers and project staff when implementing inclusive approaches in agricultural innovation is how learning and technology adaptation interact and how to reach jointly set targets. We provide a comparative analysis of the learning process induced by adaptive research (AR) in one case and a combined AR with Learning Alliance (LA) approach in another. The AR approach bridged farmers and researchers, but its implementation where researchers controlled experimentation, was not optimally conducive to experiential and discovery learning. The combined AR and LA approach expanded the number of stakeholders with whom farmers interact. This broadened the learning agenda beyond the initial objectives of the project. Although a LA provided added value in increasing the scope for learning with other stakeholders, limitations also emerged from the autonomy and informality of the learning process. Our analysis, based on the notion of situated learning, revealed practical concerns were a major driver in the participatory process. Incorporating insights and skills developed from experimentation to support the reconfiguration of practices, not only farming but also trading and milling, is needed. Lastly, the approaches have complementary value. Inclusion of more actors, as in a LA should not merely facilitate deliberations between actors but also support the reconfiguration of different practices and the functional linkages between these practices.

© 2017 Royal Netherlands Society for Agricultural Sciences. Published by Elsevier B.V. All rights reserved.

1. Introduction

Recent studies provide empirical evidence for the potential as well as the challenges of co-creation of knowledge in the spread of technologies (Rodela, 2014). Over the past decades, most agricultural research and innovation projects have developed approaches that are more inclusive towards end users (e.g. Horne and Stür, 2003; Palis et al., 2010; Adekunle and Fatunbi, 2012). These approaches open space for learning of various actors at different levels. A major overall aim is to boost learning, considering that agricultural innovations require learning beyond the farm level and coherent practices among a variety of stakeholders (Leeuwis, 2004). Although its importance has been recognized conceptually, empirical studies that target learning processes are still limited (Wals and Rodela, 2014). Triggered by the need to understand whether and how processes of learning can be facilitated, empirical examination is required of projects that use such approaches. The study presented here examined how learning is facilitated at two sites of a project in Myanmar, one based on Adaptive Research (AR) and another combining AR with a Learning Alliance (LA) approach. We investigated these sites to understand whether and how they support learning towards innovation in rice farming communities.

AR is an approach that characterizes the needs of farmers and then uses experiments in farmers' fields to adapt a given technology to local conditions. The localized experiment thus becomes the learning activity to find out how introduced technological solutions can alleviate specific needs. The adapted technologies imply a learning effect for farmers and researchers (Krupnik et al., 2012; Palis et al., 2011; Dorward et al., 2007; Flor et al., 2016). There is also a learning effect for policy makers who can use the results for decisions on new investments for agricultural innovation (Horne and Stür, 2003).

The general principle of the AR approach is to improve the way science-based technologies are implemented in society. The underlying assumption, commonly held in the 1970s and 1980s when the approach developed, was that science produced knowledge and technologies independent of society. This is what Gibbons

* Corresponding author at: Knowledge, Technology and Innovation Group, Wageningen University, 6706 KN, Hollandseweg 1, Wageningen, The Netherlands.
E-mail address: r.flor@irri.org (R.J. Flor).

http://dx.doi.org/10.1016/j.njas.2017.03.001
1573-5214/© 2017 Royal Netherlands Society for Agricultural Sciences. Published by Elsevier B.V. All rights reserved.

Please cite this article in press as: Flor, R.J., et al., Adaptive Research with and without a Learning Alliance in Myanmar: Differences in learning process and agenda for participatory research. NJAS - Wageningen J. Life Sci. (2017), http://dx.doi.org/10.1016/j.njas.2017.03.001

et al. (1994) termed Mode 1 science. Their Mode 2 science, which increasingly became visible in the later decades of the twentieth century, is knowledge production in the 'context of application'. This is similar to what Funtowicz and Ravetz (2003) call post-normal science, raising questions about who, besides scientists, are involved in the identification of problems and formulation of research questions. One could argue that agricultural sciences have always depended on the context of application. Nevertheless, how to demarcate science from practice is a concern visible in organisations for agricultural research and extension and in debates over what distinguishes experiments from demonstrations (Maat, 2011; Maat and Glover, 2012).

The LA approach emerged against this backdrop and involves societal actors in the research process early on. The approach involves a network of various stakeholders, organised in linked stakeholder platforms, to identify, share and adapt innovative practices in specific contexts (Lundy, 2004; Lundy et al., 2005; Verhagen et al., 2008; Stelling et al., 2009). The addition of the LA as a new approach or the replacement of a tested one such as AR raises the question what added value a LA brings. We address this question from the perspective of situated learning, a notion that connects learning activities to specific practices. We examine the facilitation of innovation networks according to a LA approach and analyse if and how learning is effectuated differently from the more conventional AR approach.

The broader project in Myanmar was implemented to introduce improved cropping options to increase productivity in rice-based systems using the AR approach as its basic collaboration mode. In one of the sites, the LA approach was added to involve a broader network of stakeholders. In comparing the two cases, we examined how the AR approach influenced learning in the farming community in one site and how the involvement of a wider network of stakeholders (from the added LA approach) in the other site impacted the learning process.

1.1. Conceptual framework

Learning is a central notion used in many participatory approaches to agricultural innovation. In most approaches, social interaction is the basic principle for learning (Leeuwis, 2004). Differences appear when social interaction is further defined and located in a particular setting. In the AR approach, in-field experiments are the focal point of social interaction. The social interaction is mainly between the agricultural experts and farmers, discussing and reflecting upon the various field experiments. The AR learning model is basically a socialised version of Kolb's (1984) experiential learning, a cyclical framework in which active use, through experimentation, follows reflection on earlier observations. Results of the experiment are then again observed, reflected upon and may lead to further experimentation (e.g. Krupnik et al., 2012; Palis et al., 2011; Dorward et al., 2007; Flor et al., 2016).

In the LA approach, learning is located at the level of the network or system. In principle, all actors that have some role in agricultural innovation can be included and typically a variety of issues is at stake (Lundy and Gottret, 2007). That also implies a wider variety of interests and views. Social interaction, therefore, may take the shape of negotiations. When managed well and leading to some sort of agreement, learning takes place in the entire network or system (Kilelu et al., 2014; van Mierlo et al., 2010; World Bank, 2006).

In both approaches, the ultimate effect is a change in knowledge and action of the actors involved. In AR, the learning process is principally geared towards the farmers. In a LA, all 'system actors' are potential learners. Of primary interest is how the learning process is affected by the issue at stake and the location of activities. These factors seem to influence the process *ex-ante*, as a pre-selection of the social actors that become involved in the learning process. Site-specific non-human conditions also are important. However, in both approaches these non-human conditions are not conceptually included in the learning process.

Stone (2007) conceptualises the learning process as a combination of social and environmental learning, the latter referring to evaluation of benefits in practice. He uses the distinction to explain why farmers in India were unable to learn about the use of Bt cotton, a genetically engineered cotton variety. The intense social interaction between farmers, traders offering different seed brands, and agricultural extension workers, obstructed farmers from doing meaningful experimenting in practice, therewith undermining the learning process. The reduced scope for environmental learning, Stone argues, results in de-skilling.

The notion of environmental learning resonates with the notion of situated learning, developed to understand location-specific conditions in the learning process. The theory is primarily developed by Lave and Wenger (1991), focusing on communities of practice (CoP) to describe the context where learning takes place. Situated learning conceptualises, more generally, the combined social and environmental learning process. The situated practice of farming consists of crops, animals, tools cultivation methods and so on. The learning is not only an effect of social interaction in terms of reflection and discussion or negotiation as a deliberative process, but also requires changes in practice as a performative process, resulting in improved skills and adjusted practices (Richards 1993; Stone 2007).

Skill development and adjustment of practices take time. In specialised practices, young people acquire skills by formal or informal apprenticeship arrangements (Jaarsma et al., 2011). In farm households, children develop their skills by observing and helping the elders. Introduced innovations can speed up skill development and change of practices. Rather than a one-off decision, adoption requires situated reconfiguration, a process of unpacking, testing and adjusting the new technologies. In the case of farming, this process typically takes several growing seasons (Glover et al., 2017).

The notion of situated learning is helpful to analyse the AR and LA approaches. Rather than asking who is involved, it raises the question how involvement of stakeholders is linked to practices. What new skills are gained and employed? What reconfigurations of practice become visible? The settings created by AR and LA approaches typically bring together people from different practices. Stakeholder platforms and other project activities suggest the creation of a new, shared practice. However, in most cases these are merely temporary shared practices, for example on-farm experiments ran by farmers and experts together. We also examine, in this paper, how practices of rice farmers, traders and millers change through the introduction of new rice varieties. Although a rice miller can also be a trader, socio-technical reconfigurations and skill formation are different for each of the activities. A small adjustment in skill, for example the visual recognition of a new rice variety, may lead to reconfiguration of the practice of trading, for example negotiation over price, and a different adjustment for milling, for example fine-tuning of the mill machinery.

2. Methodology

Situated learning requires an analysis of the learning effects from an AR approach and a combined AR and LA approach. We ask who is involved in the process, including who is considered to be the 'learner' and who is making decisions on what is to be learned? Secondly, what is the learning process? This directs examination on learning activities, the actors involved and roles they play in supporting or steering learning, and how that resulted in changed skills and reconfiguration of specific practices. The learning process also requires analysis over time. This relates to changes in skill and

Please cite this article in press as: Flor, R.J., et al., Adaptive Research with and without a Learning Alliance in Myanmar: Differences in learning process and agenda for participatory research. NJAS - Wageningen J. Life Sci. (2017), http://dx.doi.org/10.1016/j.njas.2017.03.001

Download English Version:

https://daneshyari.com/en/article/5760528

Download Persian Version:

https://daneshyari.com/article/5760528

Daneshyari.com