

Is there anything left in participatory methods for agricultural research?

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Abstract

In the past two decades, the application of participatory research approaches in agriculture research had made substantial advances. Participatory research approaches have been successfully applied in plant breeding of the CGIAR. Numerous international conferences organized by PRGA have brought together many scholars around the world to share experiences in how participatory breeding is applied under different farming systems. Specialized participatory breeding training courses have been conducted to train young plant breeders in participatory research methods. The economic efficiency of participatory plant breeding has also been demonstrated and has provided evidence in support of the participatory methods (Lilja and Aw-Hassan, 2003). However, although participatory research has been successfully applied in plant breeding, it was not applied widely in other research areas. The application of social and gender analysis methods are essential for understanding the root causes of poverty and finding solutions. The potential for participatory research methods are not yet fully exploited and progress remain slow, in terms of adoption and impact, in numerous research areas. Some of these research areas that need stronger application of participatory methods are discussed here.

A considerable failure in livestock breeding programs in developing countries is attributed to failures to involve farmers who are the final beneficiaries, in planning and implementation, leading to ineffective breeding programs (Roessler et al 2008). Unlike formal breeding program and government development programs, smallholder livestock keepers in developing countries often have comprehensive breeding goals (Köhler-Rollefson 2000; Bebe et al 2003; Moll 2005; Moll et al 2007; Kosgey et al 2006; Roessler et al 2008), which are mainly driven by the underlying production systems (Wollny 2003; Ouma et al 2007). Small farmers breeding goals consider tangible livestock products of economic values but also value non-marketable products with intangible benefits such as use for insurance and display of social status (Moll et al 2007). Research has also shown that improved cross-breeds do not always perform better (Tibbo et al. 2008, Ayalew et al. 2003) because they often do not have the adaptive attributes required to fulfill the multiple roles (Drucker et al 2001). As a result, animal breeding programs which focus only on short-term market demands lead to unwanted side effects (Olesen et al 2000). Thus livestock improvement programs should consider multiple breeding goals of the communities and respect their cultural preferences (Ayantunde et al 2007; Kosgey and Okeyo 2007). ICARDA is currently implementing a community-livestock breeding program which is using these participatory principles and aims to improve the efficiency and effectiveness of livestock improvement program (Duguma et al. 2010).

Natural resources (water, soil, forestry, etc) are normally placed within a complex socioeconomic, policy, institutional and biophysical environment and traditional research approaches would hardly make significant impact in changing how natural resources are managed. Farmer participation ensures that technologies are evaluated under realistic assumptions about farmers' resources, adaptive capacity and will ensure farm-level feasibility of the technology. Farmers may suggest modifications of the technology that make the

technology more realistic and feasible. Currently, ICARDA is developing zero tillage seeder with the participation of farmers and local workshops with a fraction of the cost compared to imported version. Natural resources often involve equity concerns, for example, between upstream and downstream users, or between generations of users, or between users with different interests and powers, or between uses of different sectors, and thus NRM involves complex negotiations to develop institutional innovations that have lasting impacts. Developing such innovations and implementing them on the ground are much more problematic. Social and gender analysis methods rooted in participatory research principles are key to unlocking the complex social context that hold the success of such innovations. The extent that such methods are applied is not commensurate to the enormity of the problems. Participatory research has a great potential for addressing natural resources problems, including the adaptation to climate change, which affects the lives of the poorest in developing countries. This can be done by blending more quantitative economic methods and participatory social and gender analytical methods in testing and assessing the impacts of institutional innovations for equitable, sustainable and profitable management of natural resources. The out-scaling of participatory research methods on the ecological and social landscapes in a way that technological and institutional innovations have notable impact on the three global goals of the CGIAR (food security, poverty reduction, sustainable management of natural resources and the environment) will require much greater involvement and commitment (Aw-Hassan, 2008).

Understanding intra-household dynamics and allocation of tasks and roles is a pre-requisite for successful adoption of technological and institutional innovations. However, this do not always happen. It is possible to hypothesis that innovations that do not give sufficient consideration of gender aspects will not succeed because they leave out a significant social factor. Application of gender analysis has not been successfully applied as much as participatory research methods were applied in plant breeding. There are numerous social innovations such as collective action, market access through value chain development, micro-finance, utilization of local knowledge, seed systems and others that would hugely benefit from social and gender analysis using participatory research methods and hold the key to the sustainable improvement of livelihoods in the vast majority of rural communities in developing countries. These innovations fill critical gaps in the flow of financial capital, information and innovations and development of social capital in the rural areas of developing countries based on realistic assumptions about the rural context in which innovations are expected to contribute. For example, the role of farmer-to-farmer seed exchange which was initiated by participatory plant breeding has been demonstrated (Aw-Hassan et al. 2008). That study suggested complementary roles between formal state-controlled seed system and local seed (input) sellers that can shift seed marketing in a way much more accessible to small-sale farmers. There is great potential in using computer models in real time with rural communities demonstrating the impacts of different collective action scenarios on natural resource use. It is also possible to show the effectiveness of different extension approaches, for example comparing one based on farmers' demand which considers market demand of agricultural products and services, and which is based on the principle of two-way information flow compared with the top-down approach of traditional extension systems. Effective farm advisory services are a critical, but often overlooked, component of agricultural and rural development which can benefit from the application of

participatory principles. The value of well organized extension system in technology uptake has been demonstrated in lentil variety adoption study in Ethiopia and Bangladesh (Aw-Hassan, et al. 2009). Effective farm advisory services, will not only transmit formally generated knowledge to farmers', but will enhance the use of local knowledge and transmit it to formal institutions so that it is included in the basket of innovations, but crucially also provides the right diagnosis of the problem and provides realistic assumptions which the technology development team is making thus increasing the chance innovation success.

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