



Farmer participatory research: Why extension workers should understand and facilitate farmers' role transitions



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ABSTRACT

Farmers who engage in farmer participatory research (FPR) change their established social roles in households and communities. As such, comprehension of farmers' role transitions is important to understand the extrinsic and intrinsic factors impeding or supporting the uptake and use of FPR by farmers. The existing FPR literature, however, does not address such role transitions. In this study, we analyzed farmers' experiences with FPR and underlying role transitions in a commercial organic agriculture project in western Uganda. We drew on quantitative and qualitative data from interviews, group discussions, and observations involving farmers and extension workers. Our results suggest extrinsic and intrinsic factors affect farmers' self-conception, influencing their willingness to participate in FPR. The level of alignment between the self-conception and the anticipated role determines farmers' decision regarding participation in FPR and affects their response pattern. Farmers' response pattern and individual set of inhibitors and facilitators lead to the experience of role insufficiency or role mastery, which is crucial for farmers' continuation or termination of on-farm experiments. Understanding and facilitating role transitions is, therefore, essential for sustaining on-farm experiments, which complements current technical FPR training.

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1. Introduction

Interest in farmer participatory research (FPR) has grown in agricultural development since the 1980s (Ponzio et al., 2013; Van Asten et al., 2009; Van de Fliert and Braun, 2002). According to Okali et al. (1994), farmer participatory research, which operates at the interface between knowledge systems, is a people-centered process of purposeful and creative collaboration between local communities, service providers, and formal agricultural research. The purpose of such collaborations is to develop and adapt agricultural technologies to local environmental conditions of farmers. By applying FPR principles, farmers work with extension workers and researchers to formulate research questions, decide on experimental designs, monitor crop experiments, analyze results, and draw conclusions relevant to farming practice (Lawrence et al., 2007). Through 'the exchange of experience with the end-user' (Drechsel, 1997, p. 8), FPR fosters the biophysical, socioeconomic

and institutional adaptation of technologies.

In Sub-Saharan Africa, FPR arose in response to the low uptake of technologies developed on research stations by scientists targeting farmers. Rather than developing and releasing 'perfected' technology packages comprised of seeds, fertilizers and prescriptions, FPR co-develops, and as such, adapts agricultural technologies to inhomogeneous farming and living conditions (Waters-Bayer et al., 2009). It has been used particularly in resource-poor, risk-prone areas, with inhomogeneous biophysical, political and socioeconomic conditions (Farrington, 1998; Ponzio et al., 2013; Van Asten et al., 2009; Van de Fliert and Braun, 2002; Witcombe, 1999). FPR has significantly improved the applicability of technologies to local circumstances, as well as increased their acceptance by farmers.

The agricultural development community engages smallholder farmers in FPR especially in development-oriented projects emphasizing community participation. Such projects have various purposes, including plant breeding (Freeman et al., 2002), soil fertility management (Mubiru et al., 2004), and integrated pest management (Van den Berg and Jiggins, 2007). Development-oriented projects also aim at building the innovation capacity of farmers to drive local innovation in future. Through FPR, farmers become experts in observing, anticipating and applying agronomic

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principles and practices. Given the benefits, one would expect the use of FPR by all farmers equally during development-oriented projects.

Data we collected in Uganda, however, indicates that not all farmers participate in FPR with equal intensity. While some farmers actively engage in FPR, others alter experimental protocols or stop experimentation altogether. Such diversity suggests there must be factors influencing the use of FPR in development-oriented projects. The FPR literature (Ambassa-Kiki et al., 1997; Apantaku, 2006; Drechsel, 1997; Sumberg and Okali, 1997) proposes reasons, including (i) trade-offs between resource use, and (ii) labor and land shortages. Although reasonable and important, we believe such extrinsic factors only partially explain the engagement of farmers in FPR. Further factors consist of difficulties in getting farmers and scientists together (Bentley, 2006), hidden expectations by farmers, and researchers' dissatisfaction in cases where they have been provided with erroneous data by farmers (Van Asten et al., 2009). The relevance of such intrinsic factors for a person's behavior, decision-making and well-being is increasingly acknowledged in social sciences, including psychological research (Holmes, 1992; Kalsched, 1996; Winkelman and C. Berridge, 2004) and in public health and nursing studies (Aroian, 1990; Weiss et al., 2007).

We assume that the introduction of FPR affects intrinsic factors, including attitudes, values, beliefs, and self-perception. This changes the social role of farmers in the community, and alters relations with families, neighbors and community members. The extent to which changes in social roles are relevant in explaining the engagement of farmers in FPR, however, remains an open empirical question. The FPR discourse rarely reflects on farmers' role transitions to explain how farmers engage in FPR.

In this article, we investigated the role transitions farmers in Uganda undergo when engaging in FPR. These farmers used FPR for testing new crops under conditions of commercial organic agriculture, supported by a development-oriented project. We wanted to know how farmers respond to FPR and to understand the extrinsic and intrinsic factors influencing their responses. Understanding such responses through a role transition perspective helps in eliciting what influences how farmers participate in FPR. We argue that a role transition perspective complements our understanding of facilitators and inhibitors for engaging successfully in FPR. Hence, insights about farmers' role transitions are of significant value to FPR research.

2. Role transition theory

Linton (1936) described a role as a phenomenon prescribed by culture, social structure, and society. Through socialization, individuals acquire the knowledge and skills to fulfill the role compatible with their social status. Parsons (1951) proposed that social roles become explicit through actions. A role is thus the routine behavior expected by members of society from a person with a certain status and position. Whereas status signifies the prestige members assign to the role, the position defines the place of the role occupant in a social structure. Specific roles are associated with rights and responsibilities and are frequently ascribed along power gradients (Allen and Van de Vliert, 1984; George, 1993; Parsons, 1951). In traditional cast systems, for example, members of a higher and lower cast have distinct occupations, rights, and obligations (Dumont, 1980). Roles grant individuals access to groups and communities. Losing a role implies the loss of access to community resources. In this sense, social roles are the summary of cultural patterns linked to a certain position and status (Allen and Van de Vliert, 1984; George, 1993). In each social organization, members occupy various social roles. For example, employees in

companies take up roles that are formally defined through job descriptions and others that emerge through interaction among colleagues (Nicholson and West, 1988).

Roles and the associated status and position farmers have in a given social setting are contextual and dynamic. The time-bound shift from one role to another is what we refer to as role transition. We define a transition as the complex, non-linear change between different dynamically stable states. Sometimes disruptive events disturb such stable states and trigger transitions (Mrotzek, 2011). Transitions between different dynamically stable states also result from intention and planning (Raven et al., 2010). A change of strategy, such as a subsistence farmer who becomes a market-oriented agriculturalist, results in a simultaneous change in expected behavior and an accompanying transformation of his or her social role.

Meleis et al. (2000) categorized conditions facilitating and constraining role transitions at three levels. Firstly, at the personal level, role transitions are influenced by personality, socioeconomic status, attitudes, values, beliefs, and self-perception, as well as knowledge and information. Secondly, at the community level, available community resources and social dynamics provide support for or resistance to processes of role transitions. Thirdly, at the society level, culture and traditions create the milieu in which role transitions take place.

Personal, community and societal conditions affect both the process and the outcome of role transitions (Meleis et al., 2000). Black (1988, p. 278) identified the degree of adjustment, defined as 'the degree of comfort the incumbent feels in the new role and the degree to which they feel adjusted to the role requirement', as an indicator of the degree of role mastery. The degree of adjustment changes over time as role transitions are gradual and dynamic socio-psychological processes. To adjust to a new role, people may employ four different strategies (replication, absorption, determination and exploration), which Nicholson (1984, p. 174) calls 'modes of adjustment'. Through *replication*, people neither alter their values and attitudes nor the role requirements. Through *absorption*, people adapt their values and attitudes to the role requirements, without changing the latter. Through *determination*, people change the role requirements without changing their values and attitudes. Through *exploration*, people change both the role requirements and their values and attitudes.

The adjustment to a new role is further influenced by several facilitating and inhibiting factors (Black, 1988, p. 280). These factors include the 'individual's desire to adjust', 'open mindedness', 'an individual's self-confidence', the fulfillment of expectations, knowledge about the new role, coping of the family with their new situation and interactions with the wider social environment. Role conflicts can both hinder or facilitate role transitions. Such role conflicts arise within and between persons. Frone (2003) describes work-family conflicts in family-run enterprises typical for agriculture, such as when individuals remain in their family role while working. Role transitions are less conflictual when the social environment of the role occupant resonates with the changes, or when it changes too. The more a new role differs from established institutions and working routines, the higher the likelihood of sanctions by the community to which the role occupant traditionally belongs (Parsons, 1951).

The combination of conditions, modes of adjustment and inhibiting and facilitating factors determines the outcome of role transitions. The experience of 'role insufficiency', which is such an outcome, appears when the self or significant others perceive the non-attainment of role requirements, leading to a dysfunctional role transition. The experience of 'role mastery', on the other hand, describes situations when people fulfill role requirements, identify themselves with their new role and thus master it, causing a

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