

Towards a More Integrated Theoretical Orientation for the Study of Innovation Sustaining Networks in Africa

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Abstract

Innovation plays a crucial role in livelihood strategies of small scale farmers in Africa. Social relationships among farmers exert a significant influence on the extent to which adoption and adaptation of innovations succeed or fail. Using data from in-depth interviews conducted in mid-2005 with 26 small scale farmers in Uganda's Luwero and Kamuli districts, we identify the factors that farmers considered when adopting a set of innovations promoted by an indigenous non-governmental organization. We then examine how the process of adopting innovations affected farmers' social networks. We found that farmers carefully thought about the constraints they would face by adopting innovations and weighed these against the benefits they anticipated. As the process of innovation adoption unfolded, farmers experienced changes in the way that they used information and in individual and group status. These changes, in turn, helped shift the distribution of power in relationships between farmers and other actors in the agricultural sector, and affected how they made decisions on subsequent adoption of innovations. In the conclusion, the need for further research on how positive and negative changes in farmers' social networks occur during innovation adoption is highlighted.

Keywords: information dissemination, status transformation, innovation adoption, livelihood strategies, social networks

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INTRODUCTION

In the face of changing environmental and economic realities, agricultural innovation constitutes a cornerstone in efforts to develop agriculture and improve the livelihood strategies of small-scale farmers in Africa (Sanginga et al. 2004; Boselie et al. 2003). Innovation can be defined as the activities and processes associated with the generation, production, distribution, adoption, adaptation, and widespread use of new technical, institutional and organizational knowledge (Pretty 2003). In the African agricultural sector, innovation is a process that requires linkages and alliances among many actors and stakeholders and is supported and embedded in context specific social relations (Wennick and Heemskerk 2006; Fairhead and Leach 1999; Barret 2005; Hinselwood 2003).

While innovation is a multi-stakeholder process that cannot be achieved by one group of stakeholders, the reconfiguration of agricultural research and extension in African countries means that positive outcomes are now particularly dependent on the role that farmers play in innovation systems (Wennick and Heemskerk 2006). At the farmer level, social networks, and the changes that occur within them, have emerged as a crucial element in defining the nature of that role and delineate the context for success or failure of innovations. For farmers, these networks facilitate and incubate innovations by providing a space where knowledge sharing, experimentation and risk mitigation can be embedded.

Although there has been recognition of the importance of social networks in innovation processes, precisely which social mechanisms in African networks serve to enhance or inhibit innovation processes has received little attention. This paper follows two such social mechanisms by examining how a set of innovations adopted from a non-governmental organization (NGO) affected processes in social networks for small-scale farmers in Luwero and Kamuli districts in Uganda. First, we develop a typology of the farmers interviewed. Then we analyze how information transfer and social status were affected as farmers in both districts adopted innovations.

METHODS AND DATA COLLECTION

Operationalization of Key Concepts

Preliminary operationalization of innovation and social networks was established prior to data collection. Innovation was conceptualized as a process rather than strictly an outcome. In this conceptualization, the historical and social processes related to innovation are seen as extending beyond the technological realm (Freeman 1997), and are dependent on the context and differential socialization processes and actors (Lindkvist 1998; Schrum 1985; Goldberg and Shenhav 1984; Koenig 1983). In the context of the study, innovation was defined as the activities

that farmers in Luwero and Kamuli districts pursued in order to adopt and diffuse new agricultural materials, techniques and knowledge. The purpose of defining innovations in this way is to bring to the fore the social network ontology that embeds innovations.

For operationalization purposes, the study focused on innovations that were introduced by Volunteer Efforts for Development Concerns (VEDCO), an indigenous NGO that disseminates agricultural innovations to small-scale producers to promote food security and sustainable agriculture in Uganda. This focus reduced variability in the institutional actors involved and innovation dissemination models. Furthermore, focusing on practices, technologies and knowledge shared by VEDCO was important in enabling discussion of the innovation concept in concrete terms with farmers.

Similar to Fairhead and Leach (1999) social networks were conceptualized as relationships among farmers. Social networks and their particular organization and resources were seen as comprising of structural elements, different functions and effectiveness, feedback loops, interactions in time and space, and were context specific (Coleman 1988; Adler and Kwon 1999; Grant et al. 2002). Bourdieu's (1986) treatment of social networks within a critical theory framework that addresses issues of structure and power was also used to conceptualize social networks

The connection to innovation was on how farmers drew on their formal and informal social networks to access resources, circumvent institutional barriers and acquire knowledge to support the innovations they adopted from VEDCO. Informal networks included household members, kin and friends while formalized social networks were evident through membership in farmers' groups.

Farmers Interviewed

The aim of the study was to identify which social mechanisms were important for innovation processes among small scale farmers in Uganda. Because we were interested in understanding social processes important to farmers, a grounded theory approach was used to guide the data collection. Using grounded theory, one seeks to understand social phenomena through observation, conversation and interview. The important part of grounded theory however, is the emphasis on letting respondents tell their situation the way they see it (Glaser and Straus 1967). In line with this approach, a set of questions were used in the interviews with farmers, but farmers guide conversations and related experiences that mattered to them.

In-depth interviews were conducted with 26 farmers from Kamuli and Luwero districts. The farmers were divided into four groups. Table 1 shows farmers interviewed under each category.

- ***Food-secure/agricultural trade farmers*** - had enough food for their household and enough surpluses to sell on the market regularly; some sold their produce on the domestic market while a few sold their produce to the European export market through a produce export company (IceMark).
- ***Food-secure farmers*** - had enough food for their household but did not have regular surpluses to sell to the market; any surpluses were sold on the domestic spot market.

- *Moderately food-secure farmers* - currently had enough food in the household, but this situation was precarious; if they experienced a shock to their livelihood, they would quickly slide back into food insecurity.
- *Food-insecure farmers* - did not have enough food to satisfy household needs.

The initial stage of the study was conducted in Kamuli district, in east-central Uganda where VEDCO had been involved with farmers for six months. This relatively short time period facilitated an understanding of how social networks were used by farmers in the initial stages of innovation adoption. The study then moved to Luwero district where VEDCO has been providing rural development support services since 1986. Owing to the longer length of time that VEDCO had been involved with Luwero farmers, this paper focuses primarily on analysis of interviews in that district with insights from Kamuli incorporated.

Two main areas were covered in the interviews. A contextualizing set of questions asked farmers to discuss what innovations they had adopted and the experiences they took into consideration when adopting those innovations. This set of questions was designed to create a typology of farmers to permit comparison with other farmers in Uganda and sub-Saharan Africa. The other set of questions explored the mechanisms within networks that supported innovation processes.

RESULTS and DISCUSSION

Innovations adopted from VEDCO

Farmers interviewed were asked to identify and discuss the innovations that VEDCO had introduced. Their inventory covered four main areas: (1) new farming and animal rearing techniques and practices including mulching, confined poultry and piggery projects; (2) high yielding traditional crop varieties such as banana, orange fleshed sweet potatoes and rice; (3) export crops such as okra; sunflower and vanilla; and (4) market linkages to buyers for these crops.

Profile of farmers Interviewed

The ages of the farmers who were interviewed varied. The oldest farmer was a female widow who estimated her age at 63 while the youngest farmer interviewed was a 24 year old man. A majority of the farmers interviewed had at least a primary school education with only two farmers never having attended school. While several male farmers had attended high school, only one male farmer had finished secondary school and only one female farmer had attended secondary school.

Livelihood sources

Agriculture constituted the main livelihood source for all respondents. All of the farmers were involved in growing more than one crop and practiced small scale animal rearing. Approximately 23% were involved in domestic and export agricultural trade. Interestingly, there seemed to be a distinction in agro-enterprises in which female and male farmers were involved. In Luwero district, the two most successful female farmers were involved in animal rearing. One of these

farmers was involved in rearing pigs while the other one was involved in rearing chickens. The animals were then sold on the domestic market. By contrast, the two most successful male farmers grew okra which was sold on the European export market. Perhaps because of the volume and consistency required, institutional markets were rarely mentioned as a potential source income in both districts. Only one male farmer in Luwero reported selling tubers on the institutional market. He sold cassava to the local boarding school. In Kamuli district, only one farmer (a 32 year old man) was involved in regular domestic agricultural trade; he belonged to a cooperative that sold maize on the domestic and regional markets. None of the farmers interviewed in Kamuli was involved in export trade.

Just over half (54%) of the farmers interviewed were food secure or moderately food secure. These farmers reported that in case of a good harvest, they sold extra produce on the domestic spot market. Spot marketing was done in two ways. First, farmers waited for traders who routinely scouted the area to approach them and negotiate a price for the desired produce. In this case, transportation costs were borne by the trader. Alternatively, farmers transported their produce to the market and hoped they would be able to find a buyer.

The remaining 23% of farmers were chronically food insecure, a condition that did not appear to reflect the amount of time or attention that they had received from VEDCO. For instance, in Luwero district, one farmer had been with VEDCO for four years but was still food insecure while another who had been with VEDCO for three years was already engaged in domestic agricultural trade. These farmers indicated that part of the reason they remained food insecure was an inability to draw upon resources important for innovation continuation, such as labor or information, from their social networks.

Factors influencing farmers' decision to adopt innovations

Farmers analyzed the constraints they would face before adopting innovations and weighed these against the potential benefits. In both districts, environmental changes (increased pests and diseases, soil degradation, irregular precipitation patterns) were cited as a major constraint to adopting and sustaining agricultural innovations.

Isaac, a moderately food secure farmer from Luwero, when asked what some of the major challenges to the adoption of agricultural innovations, talked about the challenges of the changing environment.

There are challenges of weather that have really disrupted us [farmers]. If I plant a crop that necessitates very little rain then there is too much of it, I mean, I loose. And when there is too much of one thing, rain or sunshine, and I end up not meeting my expectations because of the weather changes. Interview July 8, 2005.

Jane, a female farmer from Luwero, when asked the same question, replied,

There is a problem of weather changes whereby I plant, lets say beans, and then they are hit by a dry spell. Then when the rains come, there is too much, I cannot harvest anything. I need moderate rainfall and then sunshine at optimal levels. And then the pests and diseases are now multiplying and affecting crops. If I

don't spray the beans then I can hardly harvest anything from them. Interview July 11, 2005.

Rose and Isaac were articulating sentiments that were typical of other farmers interviewed in both districts. From the interviews, it was clear that changing environmental patterns presented a major concern. Apart from environmental changes, capital, transportation, markets, information, and labor also emerged as constraining factors. Because new crop varieties required more attention in terms of capital, labor and time, some farmers opted out of adopting additional innovations from VEDCO. This was especially true for female farmers who were particularly dependent on the labor provided by children in the household. Many female farmers reported having to wait until school holidays when the children could help to start a new project. Constraints that farmers would face after adopting innovations were also carefully considered. For instance, some of the farmers had decided not to start growing a new crop variety because they did not identify a market for it before hand

In the interview excerpt quoted earlier, Isaac also talked about the challenges of marketing produce.

.....then the other thing is market. I produce expecting that there will be a market but the moment I harvest the market is either not there, or there are very low prices.

His friend James, a moderately food secure farmer, expounded on Isaac's point.

The major challenge is capital and labor. Whereby I can manage to cultivate four acres but then I have no money to employ somebody to help me manage those four acres. So I end up doing just half an acre which may not even be enough for the household consumption. So I am left with nothing to sell off in the long run and I remain in that vicious cycle of poverty. So this is a big challenge. I have no starting point as a farmer. Interview July 8, 2005

Benefits were carefully considered along with the constraints. Many farmers indicated that they went to the initial VEDCO workshops because they had a specific benefit in mind. Primary benefits included materials handed out and new farming practices taught by VEDCO. These primary benefits were geared towards increasing food security. Secondary benefits included being able to pay school fees for children, building a brick house and having disposable income.

Rose, a farmer from Kamuli when asked why she had decided to work with VEDCO, explains what drew her to adopt high yielding banana and sweet potato varieties from VEDCO.

When I discovered that VEDCO's major objective was to fight food insecurity and then poverty, such that a farmer can have a lot of produce and then a surplus for sale, that was the best seducing factor for me. Interview June 01, 2005

Simon, another farmer from Luwero, who was involved in domestic agricultural trade, paints a more vivid image when answering the same question as Rose.

I was attracted to join VEDCO basically because of the materials VEDCO was giving out; the fruit, the cement, the pigs and then other things. And I felt I should get the same. Interview June 13, 2005

Esau, a Luwero farmer who was involved in selling okra on the export market, shows how long term benefits were carefully considered by farmers before adoption of innovations.

I had two organizations, ADRAK then AMREF. I wasn't involved in AMREF because they deal with orphans and I don't have one. But ADRAK normally gives out fruits and coffee, then boar goats. But then they just educate. They don't go out and look for market for you. Because VEDCO, when they sensitize you they go ahead to look for market that's where VEDCO beats out the rest of the organizations....that is why I wanted to work with VEDCO. Interview July 7, 2005.

Farmers also reported being attracted to VEDCO's initial workshops because they were seeking crop and animal alternatives. Coffee and maize in Luwero district had been introduced by other NGOs. At the time of the research, coffee and the traditional variety of bananas had been badly affected by wilt diseases, depleting an important source of income for the farmers. Partly for this reason, farmers became interested in new disease resistant crops that VEDCO had.

The conditions reported by farmers in Luwero and Kamuli are similar to those faced by farmers in other parts of sub-Saharan Africa. Gabre-Madhin (2002) and Neven and Reardon (2004) note that small scale farmers in Africa often lack access to resources such as capital, information and infrastructure. Furthermore, there is evidence that the climate in Uganda, as in the rest of Africa, has been changing dramatically. Rainfall amounts and lengths have changed, creating more frequent cycles of drought and flooding, and presenting a great challenge to small-scale farmers who depend mainly on rain fed agriculture (Luganda 2006; Orindi and Eriksen 2005).

As noted earlier, innovation adoption is seen as one of the major avenues through which these challenges can be overcome and the livelihoods of small-scale farmers changed; social networks and their transformation are important in this process. The social networks for farmers in the study areas included family, kin, friends, neighbors as well as extension agents. In both districts farmers reported relying most on family, friends, neighbors and extension workers. This next section follows information transfer and status transformation as two of the social mechanisms that affected innovation processes among the farmers in Luwero and Kamuli districts.

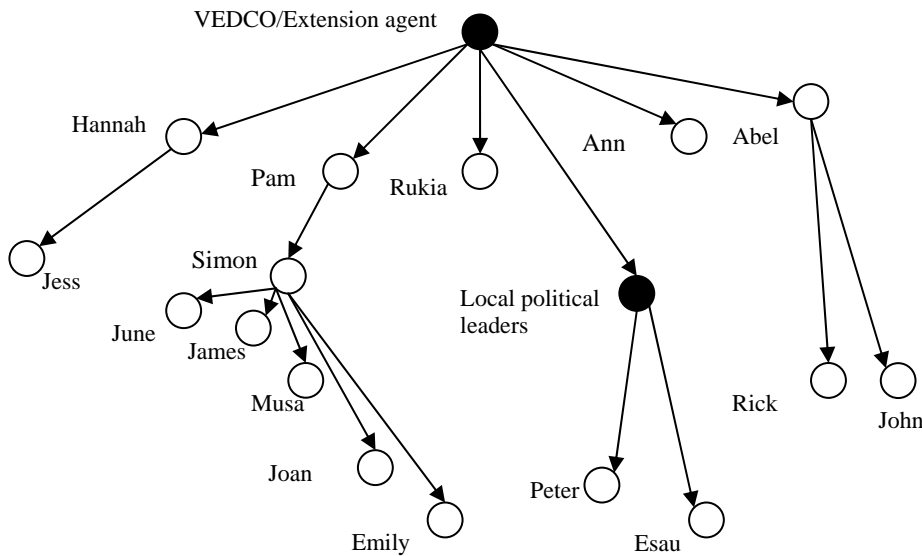
Information Transfer and Social Status

Information transfer

When agricultural innovations are introduced in an area, information is spread is an important indicator of the way social networks are organized, how they change (German et al 2006). Information transfers in the research areas emerged as an important dimension in innovation adoption and maintenance. In the initial stages of innovation adoption, information transfer was important in determining who heard of VEDCO's innovations and consequently which individuals adopted the innovations. In Luwero, 31% of farmers indicated that they had been

introduced to VEDCO's innovations by an extension agent. Most farmers (62%), however, had been introduced to VEDCO by Rural Development Extensionists (RDEs). RDEs are farmers who receive training and plant materials from VEDCO and are then responsible for disseminating the knowledge and plant materials to other farmers on a voluntary basis. This pattern contrasted sharply with Kamuli, where the majority of farmers had first heard of the innovations from a local political leader or an extension agent. This difference may be attributable to the different lengths of time that VEDCO had been operating in each district. Figure 1 below shows from whom farmers in Luwero district first heard about VEDCO; information for three farmers is missing.

Figure 1: Information Transfer for farmers in Luwero District.



While local leaders played an important role in organizing initial meetings for farmers when VEDCO first came into Luwero, it was other farmers who were responsible for most of the subsequent spread of innovations. The information paths show that social networks play a crucial role in determining which farmers have access to information and how innovations are spread. For instance, while five people indicated that they were introduced to VEDCO by Simon, two people indicated that they were introduced by Abel and none by Rukia. This indicates that the span of an individual farmer's social network has a discernable influence on how information on innovations is spread.

As the innovation processes unfolded, the type of information shared changed. Initially, information shared between farmers was based on the nature of the innovations introduced by VEDCO. This type of information included the constraints likely to be faced before and after adopting innovations and the types of benefits that farmers would expect to get after adoption.

In later stages, the information shared was chiefly related to sustaining innovations. This information was related to three general areas. First, farming techniques including mulching, pruning and harvesting. Second, educative information, such as on pesticide use and how to acquire market prices. Third, information on the success or failure of field experiments. This last type of information differed from the first two with regard to the source. While information on

farming techniques and educative information mainly originated from VEDCO, experimentation information, resulted primarily from farmers using techniques they learnt from VEDCO on other crops and sharing this information with other farmers.

Despite the difference in origin, individuals who embodied knowledge, particularly RDEs, become central in transferring information and, consequently, how innovations were sustained. In this way, the character of the information changed from a simple information transfer to knowledge transfer; individuals who embodied knowledge then became important as they were the keepers and disseminators of an important resource. For instance, RDEs who attended workshops to learn new farming techniques then passed on these skills to other farmers in their group or neighborhood. RDE farms also tended to be centers of experimentation with farming techniques. If RDEs were no longer able to interact with other farmers, this affected the transmission of knowledge to other farmers. This is demonstrated by the case of one women's' group whose RDE 'quarreled' with her husband. Her husband decided that he did not want her use part of his land as a demonstration garden. As a result, the women farmers in this group lost not only a space to experiment but also a formal gathering space where they could routinely share information; eventually, the group broke up.

Ann, who had been a member of this group, put it this way,

The chairperson had a misunderstanding with her husband which later led to the husband saying that "I no longer want you in VEDCO." So you know she was inspirational. She could mobilize us and advice us here and there. Which, when she left, led to members losing hope and neglecting group activities. So we are now working as individuals. Interview, July 11, 2005

The development of central individuals who embodied knowledge and the transformation in the character of information shared resulted in concrete changes. As farmers got more information on innovation and how to sustain them, the factors they had considered before adopting previous innovations changed. Most farmers adjusted not only their goals, but also their expectations after the first round of innovation adoption. They then felt that they had the support necessary to carry out their plans, making it possible to increase the scale or to diversify their activities.

Information was also a key leverage point in helping farmers to change their position within the agricultural sector in regard to other actors, especially traders. As noted before, many farmers who had extra produce to sell did this mostly through the spot market. Here, scout traders and buyers at the market had an upper hand in the price negotiation. At the time of the interview, however, VEDCO was making weekly market prices available for the farmers. This availability of market prices then meant that farmers were in a better position to negotiate with traders.

Information was thus a critical resource in determining patterns of implementing innovations and as a source of changing power relations among farmers and between farmers and other actors in the agricultural sector. As farmers adopted and implemented innovations, the social structure of their networks changed. The next section of this paper follows one component of that social structure, social status, as it was transformed due to innovation processes.

Social status

The transformation of social status among individual farmers and in farmers as a group emerged as a key social mechanism in affecting innovation processes. Ridgeway (2003) describes social status as an evaluative hierarchy that exists between social groups, such as farmers and traders, or between individuals. This evaluative hierarchy is structured by myriad of factors ranging from gender to education and wealth.

In both Luwero and Kamuli districts, the adoption of innovations was related to transformations in individual and group social status due to changes in food security and rising incomes for farmers. This connection between social status transformation and food security and rising incomes was to be expected, since wealth is one of the most consistent influences on social status in many societies.

Increased food production moved farmers' households towards food security while income generation translated into an ability to pay school fees, build a brick house or contribute towards general household welfare.

Peter, a Luwero farmer who was involved in selling okra on the export market, explained how increased food production and income changed how he felt about himself,

For me, as somebody who is now earning an income, I can meet my domestic demands. If I don't have paraffin or salt, I can sell some of my produce and meet those demands. I don't have to go to my neighbors, help me! Help me! This is the difference. Interview July 7, 2005.

For farmers, these developments translated into a transformation in perceived social status. These changes in status were expressed by farmers in terms of 'respect' and 'fame.' This relationship of respect and fame to increased status was clearly illustrated by Simon when explaining how working with VEDCO had changed his status.

I have changed a lot because I have respect amongst people. Apart from respect, my standards of living in the household have changed. I am changed in that all together I command respect. I have changed in that if you looked at me I am a youth but I am like an elder. ...After joining VEDCO I became famous. ...ya, it's different to be a youth and to be called Mzee (elder)

These changes, however, were not limited to individual farmers. In Luwero, where VEDCO had been working for a longer period of time, allowing for the widespread adoption of innovation, farmers felt that their community as a whole had improved its status.

Peter, expounded on how adopting okra as an export crop had changed the relationships between farmer neighbors.

I want to reflect in the relationships with neighbors. Now we are organized as a group, in the village every week farmers get 60,000 [Ugandan Shillings] out of

their sales. I have changed and the neighbors have also changed in that they have something that is raising income for them daily. I see that the village is growing and if this is continued we will develop more.

While instrumental gains did have a large part to play in changing status for farmers, agricultural knowledge also became a crucial aspect of how change happened. For many farmers, this was the first time in their lives that they felt knowledgeable about something.

Esau, when explaining the changes that happened to him, laughed and said ...

When I feel like I want to graft a mango, *I can*. When I feel like I want to make compost manure, *I can*. When I feel like I want to plant bananas correctly *I can*. Because I have the skills now (Emphasis added)

This knowledge aspect seemed especially important for female farmers, all of whom indicated that they had been transformed by the fact they could now earn money ‘as women.’ Additionally, they could now speak up and teach other women and men in the village, and consequently moved from a position of perceived dependency to capability.

Betty, a food insecure farmer and a representative of a disabled women’s group in Kamuli, explains it this way.

It has emancipated us. We have gained confidence to represent ourselves. We used to say “let one of us represent us” but we would be afraid. But now we can represent ourselves as women. We now have the skills we need to fight hunger. Interview June 1, 2005.

Another woman farmer from Kamuli, Rose, explains further.

One thing is that fame is not always found with a Msoga woman. That I am the center of consultancy is not common for a Msoga woman. Being known by very many people, rendering all those skillful facilities, I see myself as a really changed woman. Interview June 1, 2005

Community ‘respect’ was earned when farmers shared their knowledge with others. Because of the market price information provided to farmers by VEDCO, and the consequent change in the power dynamic during price negotiations, farmers as a group viewed themselves as more legitimate actors in the agricultural sector. Knowledge then became a resource that could be shared. More importantly, it could be drawn upon to change the social standing of an individual and the group.

Differential outcomes for farmers

The transformation of social networks during the adoption of innovations had both positive and negative consequences. Positive changes meant better outcomes in terms of livelihood alternatives and viabilities. At the same time that there were positive outcomes for some farmers,

there were others within the same group who could not sustain innovations that they had adopted. The case of Emily, 50 year old widow in Luwero District who was raising three grandchildren, illustrates this aspect.

Emily had been involved with VEDCO for three years at the time of the interview. Although, agriculture was her only source of livelihood, she had previously been involved in a variety of non agricultural businesses none of which had been successful. Emily's first major business venture involved selling second hand clothes on the main road between Kampala and Luwero. She was then particularly dependent on her eldest son for advice and monetary support. He became ill and was unable to provide the support needed to keep the business going. Emily also occasionally sought short term loans from RUCREF, an NGO that provides micro-finance services to small business. Individuals provided with loans have to pay back a certain portion every week with interest. Since she had to nurse her son, she was unable to put in the time needed to maintain her clothes business and meet the conditions for the loan. She then moved to inherited land in rural Luwero and shifted to selling charcoal and vegetables on the main road, as these required less time and money.

She was unable to continue her trading activities after her ill son passed away. Shortly before her eldest son passed away, she was approached by Simon who asked if she wanted to join a VEDCO farmers' group. She adopted improved banana varieties that VEDCO was promoting. During this period, her second child, a son, fell ill and she spend most of her time nursing him. As a consequence, most of the bananas died due to neglect. Her last child is also now sick and Emily is also afraid that her daughter will die.

When asked to comment on the main reason why she hasn't been able to successfully grow the improved banana varieties that she adopted from VEDCO, Emily mentions a lack of time and labor and the fact that her social network had shrunk as each of her children died. While she actually adopted the high yielding varieties, Emily was unable to maintain the bananas, due to the unfortunate series of events. As Emily's case shows, while there may be positive changes for a majority of farmers in an area, some farmers may find they are unable to take advantage the positive changes that come with innovations.

Discussion

In this paper we have discussed information transfer and status changes for a group of farmers in Uganda as they adopted innovations. We found that while increased food security and household living standards were central to an improvement in livelihoods, farmers' experiences extended beyond this instrumental role in eliminating poverty. Innovation processes provided what Anderson (2003) refers to as 'settings of sociability' in which farmers experienced changes in the way they used resources, in the way they thought of themselves and other actors in the agricultural sector.

We found that the character of information needed and the way that it is used by farmers changed significantly as innovation processes unfolded. The value of information as knowledge expanded the sphere of influence for female farmers who had become teachers and reservoirs of knowledge. While the negotiation of produce prices had been an interaction that privileged

traders, the availability of market price information had changed this; this shifted the distribution of power in relationships between them and traders.

The study showed that in the course of adopting innovations, farmers in Luwero and Kamuli started to alter how they viewed themselves and their communities; social status was one the channels through which this ‘reinvention’ occurred.

Often, status is used as an evaluation of performance and influences resource allocation or access. For this reason, status transformation could potentially provide insights regarding who benefits from innovation and why. As Ridgeway (2003) notes, it is the association of status with competence that is significant because it legitimizes inequality in the distribution of resources, access to resources and in expected outcomes. Beliefs related to status are instrumental in that they act as the cultural rules that organize the social relationships of those they privilege and those they disadvantage. For farmers these rules are critical in deciding whether they are seen as legitimate actors in the food system in the absence of institutional actors. What interviews with farmers from Luwero and Kamuli district indicate, however, is that it is possible for status transformations to have a positive effect where farmers can collectively define new courses of action and can change their position within the larger agricultural sector.

Several questions emerged out of this study. A persisting question in innovation adoption and sustainability is whether there is transformation or persistence of status distinctions among farmers who share innovation spaces. Related to that is a concern with how status distinctions contribute to differential benefits. Research conducted in Tanzania, for instance, found that despite targeting women as the initial beneficiaries, during the ‘spill-over stage,’ when information on innovations was transferred between farmers men benefited most (German et al. 2006). The persistence of old status distinctions may mean that initial benefits from interventions targeted towards certain social categories may revert back to those who are privileged by structural conditions such as status.

One way of institutionalizing positive relationships is to create formal spaces where farmers can meet to share information, skills and techniques learned through their own experimentation. These formal social spaces are especially important where institutions sanction public relations and may limit interactions, e.g., between male and female or younger and older farmers. In the context of definite time frames for development interventions, an important issue is how such spaces can be institutionalized so that they can be sustained when development organizations leave.

Developing research on additional, non-instrumental roles of innovation is of importance for several reasons (German et al. 2006). First, it can help develop an understanding of the social and farming system niches where certain technologies fit best. Second, research that goes beyond traditional categories could help in the quest to identify bottlenecks that constrain particular individuals or social groups. Third, such research identifies major leverage points. Finally, there is a need to assess the positive and negative impacts of technologies in people’s livelihoods since innovation adoption can have a profound impact on patterns of resource access.

Table 1: Farmers Interviewed in Luwero and Kamuli Districts

Type of Farmer Interviewed	Luwero District		Kamuli District	
	Women	Men	Women	Men
Food Secure/Agricultural Trade	3	2		1
Food Secure	1	2	2	
Moderately Food Secure	4	3	1	1
Food Insecure	2	2	2	

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