Farmers groups within extension networks in Northern Uganda: inclusive or exclusive?

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Abstract

Group extension methods are widely recognized as the most effective extension method in agricultural development internationally. Research in this area tends to look at group function, and factors that inhibit or promote successful group activity. Most development projects start with an analysis of whether groups exist or may need to be formed, and then focus on group function. However, very little research to date has considered the farmer group from a whole community context, when assessing knowledge and information dissemination in rural areas. This paper presents and discusses research findings from a case study with three communities in Gulu district of Northern Uganda, where household surveys were used to map networks within and between community members and external organizations identified as promoting agricultural development in the region.
The potential impact of inclusion or exclusion in such a group within small communities emerged as a significant issue, as well as the strong disconnect between community and external organizational perceptions of group existence, function and impact.

Introduction

African agriculture has been somewhat ‘rediscovered’ as an engine for economic growth, a panacea for poverty, and of course a key contributor to global as well as national and local food security. Issues of environmental sustainability, climate change, and livelihoods are intricately interlinked with an increasingly neoliberal and globalized world economy. International development theory and practice replicates this in the agricultural sector with a push towards commercialization of the agricultural sector, and a neutral focus in may development organizations towards linking farmers to markets (or making markets work for the poor, or whatever other euphemism used for essentially value chain integration in the subsistence, small and medium enterprise sector in agriculture. Farmers are no longer ‘beneficiaries’ of development programmes, but partners and clients. The focus is increasingly on the ‘productive poor’ (cf Kelly, 2013). Benefits are designed to trickle down from improvements in agricultural productivity gains, which are due to market failures. Alain De Janvry (2009,) points to this new paradigm or role of agriculture in development as “having the capacity to contribute to several dimensions of development”, namely; accelerating GDP growth; providing for the growing global demand for food and fiber; reducing poverty and food vulnerability in poor households; narrowing the rural-urban income gap (and social tensions); supporting environmental sustainability; and contributing to domestic economic specialization and regional integration and trade (p1). De Janvry argues that agriculture falls far
short of its potential, with under and mis-investment in agriculture by most governments and donors.

In this brave new world the farmers themselves must shoulder considerable responsibility, and provide sufficient incentive and confidence to engage with markets and the cash economy as a prerequisite for growth and development. In terms of reaching farmers, group extension methods are widely recognized as the most effective extension method in agricultural development internationally. Research in this area tends to look at group function, and factors that inhibit or promote successful group activity. Most development projects start with an analysis of whether groups exist or may need to be formed, and then focus on group function. However, very little research to date has considered the farmer group from a whole community context, when assessing knowledge and information dissemination in rural areas. This paper presents and discusses research findings from a case study with three communities in Gulu district of Northern Uganda, where household surveys were used to map networks within and between community members and external organizations identified as promoting agricultural development in the region.

**Northern Uganda**

The context for this research is the post conflict environment of Northern Uganda with a specific focus on Gulu district. In general terms agriculture is central to Uganda’s economy, providing 80% of all employment and 23% of Gross Domestic Product (World Development Indicators, 2011). These figures replicate data from many areas in Africa, with over 85% of the population living in rural areas, limited alternatives to agricultural livelihoods outside cities, and higher levels of poverty. Northern Uganda is one of the least developed regions in Uganda, with poverty rates consistently above 40% and in some cases as high as 60% (Rural Poverty portal, undated).

Northern Uganda emerged from over 25 year of civil war from 2006. The principal cause of conflict and displacement in Northern Uganda is the activities of the Lords Resistance Army (LRA), led by the infamous Joseph Kony. From 1987 to 2006 Branch (2011) estimated 100,000 civilian casualties, with 1.8 million of Northern Ugandans displaced to IDP camps (or protected villages). In addition an estimated 24,000 to 38,000 children and a further 28,000 to 37,000 adults were abducted during this period to April 2006 (Pham et al, 2007).

The process of resettlement from IDP camps mainly back to their communities operated from 2006 and the majority of peoples displaced are not resettled. For those resettled back into their communities, there are a number of context specific factors that must be taken account of in any agricultural development program.

Returnees often are facing land disputes with boundary disputes, alternative land claims and secondary displacement (particularly through privatization of land. Land that has not been cultivated for substantial periods of time is heavily overgrown. Knowledge, capacity and resources for agricultural development are scarce after such significant time away from the land and of curse there is a whole generation who has little interest in, or knowledge of, farming. Key Infrastructure, including roads, schools, hospitals, and access to clean water and sanitation, as well as links to markets, are absent or underdeveloped. Psychosocial tensions are also still evident (Betancourt et al, 2009).
The conclusion of the international humanitarian effort in Northern Uganda in 2011 led to the handback of all humanitarian coordination functions to the Uganda government. Recovery and development programming in the region is of a much smaller scale and significant reduction in international donor funding to the region has resulted in a smaller number of development agencies, working through and with local agencies (see Kelly, 2013 for more detail). Agricultural development, as already noted, is now heavily reliant in many cases on a market based approach, linking farmers to markets and integrating farmers into the value chain. The focus of such extension approaches is the consideration of the following section.

Farmers Groups

Farmers groups are ubiquitous in agricultural development programs. The whole area of the formation of community groups cuts across sectors (water user groups, self help groups, savings and loans groups, and any other examples that you can think of). This research focuses specifically on the targeting of farmer groups within communities for agricultural knowledge and information systems (AKIS).

What is a farmers group? Perrett and Mercoiret (2003) identify farmers groups or farmers organisations by orgin, with three key origins;

1. Farmers Organizations created in the context of large development programs
2. Farmers Organizations tied up with local external interventions (for example NGO programs)
3. Farmers Organizations resulting from local initiatives.

There has been substantial discussion about the benefits of working with existing groups rather than trying to form new groups, based on principals of social capital (cf Poole and Frece, 2010).

Why use group based extension? There are a number of reasons highlighted in the literature for the focus of many agencies on group based knowledge and information transfer.

1) Economies of scale benefits
2) Human capacity building (social capital) associated with group structures and processes
3) Peer support for trialing innovations
4) Provides support to training
5) Linked to above is the educational aspects linked to group processes – adult learning processes
6) Participatory development where by the “producer” owns both the problem and solution (Farmer led extension).
7) Theoretical constructs of social capital formation, participatory development and Agricultural Knowledge and Information Systems (AKIS)

This is but a brief summary but a quick review of the relevant literature shows the deeply embedded nature of the group discourse (cf Chambers 1994, Feder et al, 2010).

There are of course some potential issues with this group focus. Chambers (1994) raised the issue of who participates early in the participatory development discourse. There is a significant question mark over who is involved (who participates), as well as time commitments to group responsibilities (in particular where multiple groups
exist, where the group responsibility is broad, and/or where the focus is long term). The ability of groups to address problems (knowledge, relevance, short term versus long term focus) and the control of group agenda – groups with strict guidelines and controlling objectives may not be sustainable. There is also potential disconnect between the number of extension providers involved producing potentially diverse and contradictory messages – contributing to ‘competition’ among organization and NGOs? A final point is the public good factor, based on the link from group extension and organizational networks through to the private sector (Shankariah and Shing, 1998, Kelly, 2013).

Some Theoretical Frameworks around farmers groups

Complexity theory
Applying complexity theory to community organization exhibits a new and potentially much more nuanced thinking on the role and function of groups in agricultural extension. The “edge of chaos” thinking (which existed before Ben Ramalingens book) is a very recent move in development thinking (with perhaps the noted exception of Robert Chambers who in 1997 debated the potential for “edge of chaos” thinking to explore why community groups survived the dual pressures of development pressures and social changes – through adaptation, a theme common to one strand of thinking in agricultural development (cf Boserup, Tiffen and Mortimore, 1994). Warner (2001) notes the potential, if organizations can venture to the edge of chaos (that space that exists between the predictable yet sub optimal level of order, and a state of unpredictable chaos), to “restructure, learn, new skills, develop synergistic partnerships and adapt to their changing environment” (p8).

Interestingly Warner (2001) comments on the notion of a ‘development siege’? “no sooner has one new development technology exerted itself than another appears and business, government and civil society organizations have to restructure and adapt yet again” (p10). This concept of a “development siege” has particular resonance within the rural and agricultural development, and extension. The evolution of agricultural development from state led extension systems, through participatory development, the reduction and withdrawal of state sponsored extension, T&V extension, agroforestry, LEISA, crop diversification, through the reemergence of extension as an area of discourse, and much more recently the focus on market based approaches to agricultural development, M4P, value chains, and similar than position extensions agents, NGOs and other supporting agencies as facilitators for private sector engagement, and linking farmers to markets.

Agricultural extension Knowledge transfer and group extension methods
Agricultural extension models and thinking have varied dramatically from the resource intensive state led models of extension preeminent up until the 1980s through the dismantling of state services through SAPs and Group extension methods – adult education models – issue of scale – so farmer groups, or key farmers et are always a good method of focusing work. (cf Shankariah and Shing, 1998)

Participatory development, power (social capital)
The failures of early extension models really focused on the issues of outreach, and failures of “professional led” extension (Islam et al, 2011) There were
Trickle down

Social Networks
Darr and Pretzsch (2008) identify the drivers of innovation diffusion under social network theory, namely the bonding effect of strong ties, and the bridging effect of weak ties. In conjunction with relative abundance or scarcity of information, they conclude that in cases of information abundance strong and cohesive networks are important, but in the case of information scarcity, weakly knit networks are more effective. They argue that group extension approaches can increase innovation availability, whilst simultaneously facilitating group process and appropriately deals with social relations (strengthens of weakens as required).

Methodology
Rural development theory and practice under current international development thinking promotes economic growth through increasing productivity of marketable crops within the agricultural sector. Rural livelihoods programming for food security and poverty reduction are increasingly focusing on capacity building, and linking farmers to markets through value chain development, rather than service provision through agricultural extension, or input provision. Implementation of market-based approaches to agricultural development is often through local implementing partners, civil society organizations, and more frequently private enterprise. As international organizations (International NGOs, bilateral donors and multilateral agencies) driving this development approach become ever more removed from the communities to which they are apparently assisting there are some core questions raised about the assumptions built into this model. The aims of the research are to analyze a) Will linking farmers to markets provide the required impetus for agricultural development (assumption that farmers are willing to move to more commercial farming enterprises)? B) Will market based agricultural development provide broad based poverty reduction in rural communities (assumption that significant or sufficient farmers can engage in entrepreneurial activity to stimulate economic activity and therefore poverty reduction across a community) c) How effective are various “aid chain” models in creating effective linkages between farmers/communities and markets (that local partners are the most effective implementers)?

Each of these questions are fundamental to understanding relevance and impact of contemporary development discourse of market based approaches to rural livelihoods, food security and poverty reduction. This research tackles this question through the innovative application of social network analysis (SNA): at the community level to determine the level of engagement with market based actors within a given community, and:

at the organizational level to determine the effectiveness or otherwise of aid delivered for economic growth in agricultural enterprise in rural communities.

Network analysis is emerging as a powerful tool to bridge a gap – namely a methodological perspective that clearly embeds a link between the micro and the macro levels, that focuses internally on communities, but also on the external links to broader social structures (both social, economic and political). Social Network Analysis (SNA) provides potential to map and analyse both horizontal (community) and vertical (organizational) linkages, through the transmission of information, influence and material resources, and to map the impact and outcomes of development interventions focusing specifically on influencing these linkages for a defined purpose – in this case increased agricultural productivity. The capacity of
SNA to foster analysis of social dynamics can provide an alternative pathway to address the “limitations of the cognitive and explanatory potential of economics” (Bogenhold, 2013:293).

SNA focuses on structural relations of actors as the primary orienting principle (Knoke and Yang, 2008). The core tenet of SNA methodology is to measure and represent these structural relations accurately, as a basis for explanation of the causal factors and consequences of their relationships (Knoke and Yang, 2008). Social Network theory draws heavily on social capital concepts. The significance of SNA to this research is the capacity to understand observed behaviours rather than attributes, such as age, education gender and so on which are often used as a factor in explaining actions in agricultural development. This “structural-relational” aspect of SNA has the potential to provide an underexplored contribution to the micro-macro links in community work, and for a much more nuanced evaluation of the impact of development interventions (and therefore development planning) (Ennis and Wet, 2010; Gilchrist, 2004; Knoke and Yang, 2008).

SNA allows the quantification of the pattern of relations within a set of actors. Data collection for the construction of network data will focus on a maximum of 10 communities, across two case study areas in Uganda with high agricultural potential. One case study area will be in Northern Uganda (high agricultural potential but low agricultural output) and one in south eastern Uganda (high agricultural potential, significantly higher agricultural output). Each case study area will collect data from households within the each of the five communities – that will be selected on the basis of agricultural development programs currently operating.

Data will be collected through household interviews and focus groups, focusing on the following relations between network actors (community members, other stakeholders identified as important in agricultural development), kin, social role, transfer of material and non-material (knowledge) resources. Each household survey will take up to 30 minutes. The draft spreadsheet for data collection as basis of survey is attached. Each household will be asked to answer a number of questions regarding the individuals, households or organisations that they connect with for agricultural practices, as well as previously noted, their access to information, knowledge, marketable produce and physical resources.

As per Ennis and West (2012) this research will focus on network structure and composition, with an initial focus on “network size, connectedness of the actors, concentration or dispersion of the actors, accessibility of the network, and the heterogeneity or homogeneity of the actors” (p44). This analysis of above data will identify WHO in the community is benefitting from the market-based approaches, as well as how they are benefitting, tackling research aim 1 and 2 - Will linking farmers to markets provide the required impetus for agricultural development and will market based agricultural development provide broad based poverty reduction in rural communities. This will promote understanding of the likely impact of market based agricultural interventions, and whether the community as a whole is demonstrating benefit from the intervention or whether it is limited to a subsection or “value chain ready” farmers.
Results
This paper presents the results of the preliminary analysis of data from 105 households across 3 communities, namely Ato Con, Bidin and Okura, all of which are in Gulu district.

The linear model of agricultural extension
Often the most prominent perception of the communities with which an organization works is the charts on the walls, with beneficiary or partner details. A frequent picture is the organizational structure and Figure 1 below is from a wall in a farmers cooperative, outlining the structure between the farmers groups and the cooperative society. We used this as a basis for identifying communities – those that had at a farmers group that interacted with external agency in some way.

Figure 1: The structure of farmers groups within a cooperative society in Northern Uganda

Figure 1 is the view from above or outside the community. The remainder of this paper unpacks this view from within the community, by exploring the structures within a number of communities related to agricultural extension and production, and the perception of community members about the groups.
Age range of head of household

Figure 1: Age range of Head of Household (percentage by age group) (Source: questionnaire survey)

64% of head of households fall into the 26-49 category which is just slightly above the Uganda average of 59.2 (Ugandan Bureau of Statistics, 2010)

Figure 2: Year Resettled in Community (source; Survey Data)

Date of settlement in community. The majority of households (72% of sample) were housed in IDP camps – predominantly ALero IDP camp from 1996 until resettlement in the community, most in 2007 and 2008 as can be seen in Figure 2. Aton Con resettlement was slightly more disbursed over 2007 and 2008. From 2010 most (85%) of arrivals were not camp based. The land in the communities was therefore not cultivated in any significant way in the intervening years and required significant work to cultivate. The 22 years of conflict has left a legacy for communities members and subsistence and small scale farmers of Northern Uganda. Alongside the issue of uncultivated land, and associated problems of opening up land with limited access to
other than hand tools, there are significant land ownership and boundary disputes, lack of basic infrastructure and services including access to water, schools, health clinics, and reasonable roads (source focus group discussions).

The average household size is 6.69 persons (questionnaire survey), higher than the national average of 5 persons, and also the average for northern Uganda of 5.2 persons per household. (UBS, 2010). Land ownership is almost all customary tenure (forming the basis of many of the land disputes). Plot holdings are small, averaging 33 acres (but if the 2 farms over 100 acres are removed from the data the average size falls to 2.3 hectares. Bidin has significantly lower land holding than the other two.

### Land ownership

<table>
<thead>
<tr>
<th>Land type</th>
<th>Number of households</th>
<th>Average holding (acres)</th>
<th>Max (hacres)</th>
<th>Min (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privately owned land</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Customary Tenure land</td>
<td>98</td>
<td>2.3 acres</td>
<td>500 +</td>
<td>1.5</td>
</tr>
<tr>
<td>Rented land</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Only one household rented land – with customary tenure holding of 2 acres they had rented a further 2 acres.

In terms of area planted however the figures are very different with an average area planted 3.21 acres,
If we examine the location of households by community, we can see that Bidin is the most dispersed, along a road, with the smallest land holdings (indicated by the size of the dot) furthest from the road.

![Figure 4: Geographical location of households by community (showing land holding size) (Gulu is the main town and shown by Red dot)](image)

Data collected by household, at main residence. The identification with a community is not necessarily within neat geographical boundaries.

![Figure 5: Crop diversity (average number of crops planted and distribution) by community](image)

The diversity of crops grown is significantly less in Bidin. At the current time this is used as a proxy for risk aversion and farming knowledge, although this can be disputed. Farmers identified crop diversity as a useful indicator for a number of aspects including access to inputs – seeds and so on, access to labour, land, knowledge.
Figure 6: Crop diversity, and group membership by community

Figure 6 explores whether the diversity of crops planted is impacted by membership in a farmer group. There is a relationship between the two in Okura where farmers with the bigger land holdings plant more diverse crops, and are more likely to attend a meeting. This relationship does not hold with the other two communities.

Figure 7: Percentage of Farmers who attend or do not attend group meetings for each organization currently or previously active in community for OKURA
Figure 8: Percentage of Farmers attending groups for each organization active currently or previously for ATO CON
A review of the above 3 figures (figures 7, 8 and 9) show the breakdown of farmers attending group meetings for each organization currently or previously active (as identified by each farmer) in the three communities. Okura and Ato Con show similar levels of attendance with all three communities identifying ZOA as the most recently mentioned organization. Bidin however has much less rates of group attendance for any organization, even if they are knowledgeable about the organization and available to attend a meeting.
Interestingly, despite significant identification of organisations coming into the community, when questioned on where they would seek information if there were issues or questions with their crop only 1 farm (<1%) mentioned a group of any description (the local cooperative society), and (<4%) identified the national extension program (NAADS). Over three quarters of farmers could not identify one useful source of information that they could actively seek (as opposed to passive information through radio, extension and so on). The private sector through commercial farm shop was the most commonly cited source of information – which lends weight to the potential of the private sector to contribute to demand driven extension.

In terms of market or saleable crops 78% of farmers sell crops to “agro dealers’. This refers to a range of buyers, mostly middlemen. There is considerable knowledge on the issues of middlemen and gaining a reasonable price for crops, which is outside the scope of this paper. However, it is reasonable to assume that better market conditions would be of direct benefit to the majority of farmers who do sell produce – therefore engaging in the market at some level.

In terms of group membership overall, 62% of farmers identify as a member of a farmers group. Each community had a number of different farmers groups. It was exceedingly difficult to clearly identify the exact numbers in each group. Early in the paper the neat liner view of the extension and development process as seen by the donors and development organisations was outlined. Figure one identified the structure of a local cooperative group – 10 farmers groups with 20 farmers per group. This shows a neat ‘beneficiary’ list of 200 farmers as direct beneficiaries (and a much larger number of indirect beneficiaries) all of which are tabulated somewhere on a results sheet in a donor agency.

However, this research targeted those groups as an entry point into the community. In the first community researched the total group members of this specific group was identified as 178 farmers. In other communities equally large numbers were identified. Questioning on the notion that there were 30 members according to the organisation simply was ignored. There is no group in that community with 30 members. Membership is also a fluid concept. Members and non members often bulk their products for purchases through the co-op. There was a clearly identified chairman of the group and some committee members (although the committee members and in 1 case the chairman) were not those listed by the organisation. It seems the structure and function of these groups at least was significantly different to what was demanded by donors and development organisations.

The inclusion of farmers in groups, and their attendance at meetings was driven by a range of factors, well outside the control of the development organisations involved (and donors directly or indirectly). There were also a number of farmer groups who were not linked to any organisation, with some farmers identifying as members of multiple groups. These groups appear to be mainly aspiration. Organisations needs groups. Farmers know this and there is benefits to be had form engaging with an organisation so being part of a group ‘just in case’ seems a useful strategy. However, there was also the issue of gatekeepers in groups. 2 of the respondents commenting on issues of accessing groups mentioned the money required to become a member. On following up this was not relate to any group charges, but simply an entry fee imposed by a particular individual.
Discussion

There were substantial differences between three very closely positioned communities in this study, none of which were necessarily obvious, or taken account of in any way. Household size in Bidin is smaller, there is less crop diversity. Less people are members of groups, and less people attend any meetings. Households in Bidin owned significantly less land, and planted less area. Household heads were on average older. There was also less sale of crops. The other two communities surveyed showed much more consistency on terms of land size, households, age and so on. This has, or should have, implications for strategies for working within this community. There was less trust in organizations, less interest in engaging with organisations, and less community organisations through groups. This research did not set out to determine why these differences were there, but to explore how and why communities organize. Group extension in all three communities is based on the notion of the benefits of group membership. However, there is Ato Con more diverse, more land planted.

Bidin people who attend meetings are older, have less land, less crop diversification, and smaller households. Okura and Ato Con did not show similar traits. Implications are that the community group formed in Bidin comprises community members of a lower socioeconomic status – whether this is because the benefits are less obvious being a member of this group.

Conclusion

This paper provides the preliminary results of a survey and network analysis of three communities in the Gulu district of Northern Uganda. Overall observations include that land is available but not farmed, and land is fertile. However land disputes are a major issue, which underpin all discussions.

In terms of engaging farmers with markets and group processes; the notion of subsistence farmers is somewhat misleading, as there is some cash in the economy, and many farmers engaged in market processes, having to source seeds from seed companies, and selling produce to agro-dealers. Its not really possible to exist in northern Uganda without some access to cash. Some markets exist – whether it is the local market – mangoes etc. on the side of the road – but more importantly the existence of substantial products on the side of the road – charcoal, bamboo, are the two most obvious. Apparently trucks come past and buy them – the agro-dealers that came up so many times. Small rural farmers are at the mercy of agro-dealers and middlemen who pay very low prices in the village and then sell them on for a profit.

People are conscious of market prices and can go to another district to sell if the prices makes it worthwhile. Also the price determines what is planted to some extent – world market prices make cotton a poor choice at the moment.

Mobile phone market data is obvious useful given the sheer volume of mobile phones around. There are not many youth in the villages? Lots of young kids and lots of older people (mothers mostly) however, like many others parts of Africa there will be significant impediments to engaging youth in agricultural development.

There is one view of development from the organizations in the towns – a fairly neat and linear view that incorporates donors/partners/organisations that are facilitated to
enter village. The point of contact is a linking organisation (such as the co-op) or the farmers groups directly. There was a great picture on the wall of the 10 farmers groups in the Alero Co-op. However when we needed to contact potential groups these ten did not get a mention. Also the notion of the neat 30 farmers per group seemed somewhat ludicrous in the communities where a co-op group that apparently 30 members had 178 according to the farmers involved. There was also other groups in the same village of which the coop group chairman was also the chairman of one.

Non members of a group can also come and bring their produce to a group member to bulk them and then sell. The whole process of group membership for the purposes of power is quite weird – if the co-op limits is interventions to 30 farmers per group – then they automatically exclude multiple farmers (unless they aim for multiple groups per village with all the associated costs in time and effort.

There must be power in working together to bulk produce to get a better price – more attractive to dealer in bulk – but requires storage facilities and so on to achieve this. Although the notion of a group, and the benefits of organization are built into the process, there is no effort to engage with the complexity that is inherent in community organization. The structures imposed from outside (30 farmers, 1 group) seem the antithesis of the reality on the ground, which in itself is heavily influenced by the makeup and context of each individual community. Assumptions are unlikely to be useful or accurate. There are few generalizable conclusions to be drawn from this stage of the research but it seem apparent that there is benefit in unpacking group extension from a much broader perspective than just group function, and this research is a small step in trying to ask the right questions.

References


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