

Understanding Local Innovation in a Business Ecosystem in Gurue, Mozambique



IDIN Summer Research Fellowship Final Report

September 13th, 2016
Katrine Tjoelsen

PART 1: Summary of Research Conducted

Research Focus and Objectives:

→ Technoserve created a model in Gurue (Zambezia, Mozambique) with a commercial firm and a cooperative of microentrepreneurs, in order to provide both the managerial capacity and the proximity to the smallholder farmers. The focus of this case study is to understand how innovation happens in this local ecosystem, and what enables / prevents innovation.

Research Activities:

I helped administer a survey of 600+ smallholder farmers in Gurue (Zambezia, Mozambique). TechnoServe ran a survey of smallholder farmers in Gurue. About 200+ of the farmers were clients of Small Commercial Farmers, and the other 400+ were not. The survey was a [SenseMaker](#) survey, which means it had interviewees tell stories and then self-interpret the stories.

I interviewed ~30 smallholder farmers in and out of the innovation ecosystem in Gurue

I interviewed farmers both in and out of the innovation ecosystem in Gurue to learn what factors were unique to that ecosystem, and what were shared. In the interviews, I aimed to understand the farmers commercial relationships with suppliers and clients, how much interaction there is, and who drives the relationship.

Research Findings:

What are the most important and interesting findings that emerged from your fieldwork? Provide a summary of what you learned and the key insights you gained related to your core research question and objectives, as well as other key findings that by the end of your study seemed significant and worth reporting, even if they were not directly related to your original question.

- A commercial seed processing company creates financial incentives for local innovation
- A cooperative provides organizational and technical support for Small Commercial Farmers
 - **The cooperative facilitates local innovation among the SCFs**
 - The advocacy roles of the cooperative and TechnoServe have been essential to help the SCFs invest in tractors, develop irrigation, and adopt new crops.
- Small Commercial Farmers sell inputs and facilitate local innovation among smallholder farmers
 - Small Commercial Farmers (SCFs) are local innovators. They used to be promising smallholder farmers who now own tractor equipment, sell tractor services and other inputs, have vastly increased their own farm area, and farm new crops (soybean, pigeon pea, sesame, common bean). Some SCFs have hired tractor drivers to help them deliver services.
- Smallholder Farmers adopt new practices through commercial relationships with SCFs
 - Growing soy (purchased seeds), as soy grain has high market value.
 - Preparing land mechanically (purchased tractor services), with benefits such as reduced labor and better quality soil
- Smallholders are prevented from innovating for several reasons
 - Need money to make initial investment.
 - Need understanding that the investment is worth it. Often then need to "see it to believe it."
 - Skepticism towards new activities because one should respect tradition.
 - Tractors are overbooked and smallholders are turned away due to capacity constraints.

- Limited access to agricultural inputs because it is costly for suppliers to distribute to them.
- With regard to the relationship between farmers' social networks and their levels of innovation:
 - - Within neighborhoods, it wasn't clear to what extent the more innovative farmers had more/stronger/wider linkages than the less innovative farmers. The more innovative smallholders had tighter relationships with the small commercial farmers, but innovation tended to come along with these relationships (if a smallholder wanted to adopt certain practices, he/she often needed to enter these relationships).
 - - Across neighborhoods, there seemed to be more innovation in neighborhoods with better linkages (better infrastructure, more easily accessible). This makes sense both because better communication and because commercial activity more viable.
 - - In the cooperative of small commercial farmers, the hope is that these stronger linkages will help facilitate innovation. It is not clear how much innovation comes from those linkages, vs. how much comes from these farmers being specially selected, vs. how much comes from TechnoServe working closely with them to help them improve their agricultural practices.

Next Steps:

Does creating cooperatives and local businesses increase innovation in the local neighborhood?

This case study had looked at the innovation that is taking place in a business-driven ecosystem. However, it does not rigorously establish cause and effect, and does not give policy support for creating such business ecosystems. It would be valuable, albeit hard, to help microentrepreneurs get started in a number of randomly selected villages, and then compare the level of local innovation in those villages to control villages.

What characterizes environments where a company + microentrepreneur model can successfully facilitate local innovation?

While this case study describes how a specific company + microentrepreneur model works in Gurue, it does not attempt to look at similar models in other contexts to learn how local characteristics influence the success of the model.

PART 2: Findings Related to Local Innovation

In addition to your overall findings, we are particularly interested in your findings specifically related to certain aspects of local innovation, even if these may not have been the primary focus of your overall research project. Please answer the following questions to the extent that they are applicable to the project you conducted and to the extent you feel that you have relevant data, observations, and findings to share. This section should ideally be

Understanding Local Innovation:

What aspect(s) of local innovation did you focus on understanding or researching in your project? What did you find and learn specifically related to these aspects?

→ I focused on understanding adoption of use of tractor services and chemical inputs among smallholder farmers, especially smallholder farmers who are clients of Small Commercial Farmers who provide tractor services. I found that:

The Small Commercial Farmers (SCF) influence smallholder behavior

The SCFs sell tractor services, seeds, inoculant, and other inputs to their nearby neighbors. The established SCFs have 50-70 clients each who have adopted new farming practices as a result of the relationship.

Clients of SCFs are adopting new agricultural practices:

- Growing soy (purchased seeds), as soy grain has high market value.
- Preparing land mechanically (purchased tractor services), with benefits such as reduced labor and better quality soil.

Smallholders are prevented from innovating for several reasons

- Need money to make initial investment.
- Need understanding that the investment is worth it. Often then need to "see it to believe it."
- Skepticism towards new activities because one should respect tradition.
- Tractors are overbooked and smallholders are turned away due to capacity constraints.
- Limited access to agricultural inputs because it is costly for suppliers to distribute to them.

In the context of your research activities, if you identified any of the following, please list and provide brief descriptions. You can also attach lists or a spreadsheet as an Appendix to provide additional detail, if you feel that would be helpful.

Local Innovation Processes:

Please briefly list and describe any local innovation processes you identified taking place in the areas where you were conducting your research. What were people working on and what makes it innovative in your (or their) opinion? What problem, issue, or opportunity was each process working to address and what is the significance of that from a local development perspective?

Innovation:

- The Small Commercial Farmers (SCFs) started farming with tractors and selling tractor services, both of which were very new to them
- The SCFs have also adopted four new crops
- The smallholder farmers are starting to use tractor services for land preparation
- Many smallholders have started growing soy

Process for SCFs: Working with TechnoServe to develop the skills and negotiate bank loans

Process for smallholder farmers: Seeing their neighboring SCFs using tractor services and entering commercial relationships with them.

Local Innovators:

Did you identify any specific individuals who you or local people considered to be innovators? If so, who were they and what were they working on? What was innovative about their work from the perspective of their community? What is innovative about their work from your perspective?



Baptiste is an innovative farmer and extensionist. This is how he persuades nearby farmers to adopt new practices despite tradition (translated and reworded):

> “We need to look at the future and benefits of innovation vs. tradition. There are certain limitations to tradition (e.g. if someone only wants to speak local language, that’s tradition, but then we couldn’t communicate). Life will change—the future will be different from past—therefore we also need to change to be successful in the future.”

Baptiste is an innovative farmer because he reserves part of his farm for mini-experiments, where he might grow a new crop, try planting at a different time,

Enabling Ecosystem and Stakeholders:

Were there any groups, organizations, or individuals who were/are playing an important role in supporting or contributing to local innovating processes or local innovators? If so, please list and briefly describe the group/individual and what they were doing specifically to contribute to the work of those directly engaged in local innovation activity.

A commercial seed processing company creates financial incentives for local innovation. This was necessary to secure business for the small commercial farmers and smallholder farmers.

The cooperative of small commercial farmers provides managerial and technical support to the small commercial farmers, which is necessary as they are going through this transition to commercial farming.

TechnoServe has helped the cooperative of SCFs and the seed company along the way with both management, technical expertise, and grant money.

PART 3: Lessons Learned and Recommendations

Please share any challenges you encountered in implementing your research as planned, either from a practical standpoint or a standpoint of research methods.

If another student were to conduct a similar project, what would be several key recommendations you would make, based on your experience this summer?

Unanticipated challenges:

1. *Misunderstanding of local situation prior to arriving.* In my proposal, I wrote the following based on my communications with my local partner TechnoServe: “This research project aims to understand how, and to what extent, information flow through online technologies between groups of farmers facilitate local innovation. The project addresses this question by working with a community of more than 200 farmers in Mozambique that have received access to tablets and

are communicating through WhatsApp chat rooms.”

It turned out that the people who had received tablets are kids of these farmers, and the kids are only to a limited extent involved in the farm work.

2. *Working independently.* As much as I like small organizations / appreciate agency / want to be original, I (as everyone, I think) work better in teams. If we, for example, had been two MIT students trying to really understand a local problem we would have brainstormed + iterated on ideas together *and* handled some of the challenging situations together.

So key recommendations:

- Work in a team. If you think you don't need to work in a team, then definitely, even more so, work in a team.
- Be extremely clear and specific about the details of your work in your communications with your partner organization prior to entering any type of agreement with them.