Reflection on innovation processes in a smallholder goat development project in Mozambique

Birgit K. Boogaard[1*], Kees Swaans[1], S.C.J. Hendrickx[1] and M.Cosijn[2]

[1] *International Livestock Research Institute (ILRI), Maputo, Mozambique, and Addis Ababa, Ethiopia*
[2] *Cooperative for Assistance and Relief Everywhere (CARE), Maputo, Mozambique*

* Corresponding author. Email: *birgit.boogaard@wur.nl*

Abstract

There is an increasing interest among researchers, practitioners and donors in using agricultural innovation systems approaches to reach development outcomes. Limited practical experiences have been shared on the dynamics of these innovation processes and how project partners have dealt with that. The objective of this paper is therefore to share experiences from a smallholder livestock development project – the imGoats project in Mozambique – by reflecting on the dynamics of innovation processes in the project.

The paper focuses on three intervention domains of the imGoats project: improving access to animal health services, improving market access and developing communal grazing areas. For each area, the innovation process was analysed by looking at the following elements: local context, innovation type, actors involved, people taking the initiative, changing context, flexibility of project partners, pace of the process and results. The findings show that the innovation processes of the three intervention domains varied considerably in terms of participation of actors, predictability of the process, expected and unexpected results, and degree of experimentation. Different innovation processes coexisted in the same project context, but were closely interrelated. Each addressed a particular constraint, which together contributed to the overall development objective of the project, though each innovation process was different. These findings and challenges have implications for research, practice and policy. For example, the dynamics of innovation processes may vary and depend on the intervention domain; this asks for a critical reflection on the role of research, facilitation and brokering in each of these cases. Innovation processes require flexible management and should allow for joint experimentation and learning among project partners, stakeholders and decision-makers. Flexibility in project design and donor funding is needed so that not only "obvious" interventions but also unforeseen developments are catered for.

Keywords: *goats, markets, smallholders, innovation process, diversity*

Introduction

There is an increasing interest among researchers, practitioners and donors in using agricultural innovation systems approaches to achieve development outcomes like increased incomes and food security (e.g. Knickel *et al* 2009, Tenywa *et al* 2011). Underlying theories are currently crystalising and give valuable new insights into the processes of innovation. Innovation processes are often highly context-specific and the outcomes are difficult to predict (e.g. Hall 2007, Klerkx *et al* 2012). Hence, there is no blueprint to enhance innovation; instead, there is a need for recognition of diversity of innovations that are adapted to local conditions, i.e. "letting a thousand flowers bloom" (Hall 2007). Such approaches require a high degree of flexibility of project partners, such as farmers, NGOs, national and international agricultural research institutes, and donors to adapt to local and changing situations (e.g. Hall 2007, Klerkx *et al* 2012).

The underlying theory is rather clear, but relatively limited practical experiences have been shared on the dynamics of these innovation processes and how project partners have dealt

with the dynamics within an existing project design. The objective of this paper is to share experiences from a smallholder livestock development project – the imGoats project in Mozambique – by reflecting on the dynamics of innovation processes in the project.

Materials and methods

The imGoats project aimed to increase income and food security in a sustainable manner by enhancing goat value chains. CARE Mozambique and the International Livestock Research Institute (ILRI) implemented the project in Inhassoro District, Mozambique, from February 2011 to June 2013. The project worked with about 500 goat producers in 19 communities in Inhassoro District (Inhambane Province). The project rationale was that market opportunities for goat smallholders could be increased by improving communication and coordination between value-chain actors through an innovation platform (IP). This paper describes the process of innovation rather than the multistakeholder processes. It is however recognised that the two concepts are clearly interlinked and that multistakeholder processes are important to enhance innovation (e.g. Nederlof & Pyburn 2012). Over a two-year period, nine IP meetings took place. Monitoring was done using Outcome Mapping, while detailed reports were made of each IP meeting.

The paper focuses on three intervention domains: improving access to animal health services, improving market access and developing communal grazing areas. For each area, the innovation process was analysed qualitatively by looking at the following elements (adapted from Triomphe *et al* 2012): the local context, innovation type, actors involved, people taking the initiative, changing context, flexibility of project partners, pace of the process, and results.

Findings

Improving access to animal health services

In Mozambique, there are no animal health services for goats although disease occurrence is one of the main production constraints. CARE had experience with training paravets[11] (community animal health worker, Figure 1) to treat cattle in the local context. Building on this experience, 16 paravets were trained to treat goats. Based on this proven model, CARE and ILRI took the initiative at the project start. The innovation contained a technological component – e.g. treatment against ticks – as well an organisational component, e.g. paravets started working together with producers, community leaders and local government staff. Existing extension and training models were refined, but otherwise limited changes were required. As such, also limited flexibility was asked from the project partners. Due to CARE's experience and the biweekly meetings of CARE extension officers with each paravet, the pace of the process was rather quick: within two years, 16 paravets had been trained and smallholders were using and paying for paravets' services, thus contributing to the intervention's sustainability.

Figure 1: Community animal health worker treats goats against ticks

[11] Paravets were trained as a part of a 7-year project called Sustainable Effective Economic Development (SEED) funded by CIDA (Canadian International Development Agency).

Summarising, the innovation process can be described as a rather predictable process, as it was planned and led by CARE/ILRI and included familiar stakeholders and relatively straightforward activities.

Improving market access

Goat keepers in Inhassoro District usually sell their goats irregularly when there is a household need (Boogaard *et al* 2012). There are no goat markets in the district, but CARE had experience with setting up cattle fairs in neighbouring districts. The initiative was taken by the IP members and CARE/ILRI during an IP meeting. The innovation consisted of an organisational component – increased coordination between value-chain actors – and an institutional component – the introduction of weighing scales by CARE and a pre-established liveweight price to guarantee a fair price (Figure 2). Over time, the situation changed considerably as demand for goats was lower than anticipated and traders were reluctant to use the scale. Subsequently, CARE and ILRI experimented with different market models, e.g. exploring the local market, involving the private sector and commercial investors, and exploring markets at longer distances (e.g. Maxixe market at 250 km and Maputo market at 800 km). These changing market conditions required high flexibility of the project partners, and the pace of the process was rather slow. Moreover, the project partners had less experience with this innovation domain compared to animal health. In the two years of the project, six goat fairs were organised, with varying degrees of success in terms of sales numbers (ranging from 0 to 77 goats sold per fair).

Figure 2: Goat fair: goat weighing (left) and female goat keeper counting money after sale (right).

The innovation process can be summarised as being partially planned, led by CARE/ILRI together with IP members, and including familiar and new stakeholders and activities. Overall, the process was rather unpredictable.

Developing communal grazing areas

Most goats in Inhassoro District are tethered (Boogaard *et al* 2012) even though grazing areas are present in the district (Figure 3). Moreover, there are limited documented experiences with communal grazing areas in Mozambique. The IP members identified the need for communal grazing areas in an IP meeting. The innovation consisted of an organisational component – collective action between smallholders, community leaders, paravets and local government – as well as an institutional component (legalisation of the areas by the district government, including demarcation of the area, and the establishment of an association in three communities which was legally responsible for the area). These activities were unexpected and unplanned by CARE and ILRI. As such, it required high flexibility, which included joint experimentation and learning, involving an additional study on carrying capacity of grazing areas (Marblé 2012) and the development of training modules for CARE staff and goat keepers. CARE also supported local government to act on existing land-use strategies. The pace of the process

Figure 3: Communal pasture area

was intermediate: it took time for the project partners to learn about this new domain, but legalisation went relatively smoothly because it connected to existing land-use strategies of the Mozambican Government. At the end of the project, communal grazing areas have been identified in 12 communities. However, challenges remain such as collective management, theft, lack of herders and uncontrolled fires.

The innovation process can be summarised as unplanned, led by IP members and other actors with strong input from CARE and ILRI, involving new stakeholders and activities, i.e. an unexpected and unpredictable process.

Challenges and implications

A major challenge for the imGoats project was the tension between the project objective to contribute to development outcomes in a relatively short project period (30 months) and the different paces of the unfolding innovation processes. For example, the development of market models took more time than anticipated and it was difficult to keep traders engaged throughout the project. Moreover, the support of unplanned ideas, e.g. communal grazing areas, required significant resources from CARE and ILRI.

These findings and challenges have implications for research, practice and policy. The following recommendations can be made:

- Innovation processes ask for flexibility, joint experimentation and learning among project partners.
- The high diversity of innovation processes requires flexibility in and reflection on the roles of research in Research for Development (R4D), e.g. in terms of facilitation and brokering. The latter can be described as a "third-party position, purposefully catalyse innovation through bringing together actors and facilitating their interaction" (Klerkx & Gildemacher 2012: 221).
- Participatory monitoring and evaluation is needed to capture the dynamics of innovation processes and learning.
- Decision-makers need to be engaged in the process to ensure that innovations are embedded in government strategies and policies.
- Project design and donor funding should allow for a certain degree of flexibility, e.g. by agreeing during the project design phase that the final decision on the project interventions will be taken after one or two years of project implementation.

Conclusions

Based on these findings, the following conclusions on innovation processes can be drawn:

- The three innovation processes varied considerably in terms of the participation of actors, predictability of the process, expected and unexpected results and degree of experimentation.
- Each innovation process addressed a particular constraint, but the different constraints were closely interrelated; together they contributed to the overall development objective of the project.
- The co-existence of different innovation processes in the same project context required substantial flexibility from project partners in terms of managing these processes.

In addition to the conclusions mentioned here, it is likely that the different innovation processes positively influence each other. For example, quick gains through planned interventions may build the necessary trust between farmers and other stakeholders to address more persistent and unforeseen problems. However, as this was not the focus of our study, we cannot make strong conclusions in this regard.

References

Boogaard BK, Hendrickx SCJ & Swaans K. 2012. Characterization of smallholder goat production and marketing systems in Inhassoro District, Mozambique: results of a baseline study. ILRI Research Brief. Maputo: International Livestock Research Institute.

Hall A. 2007. Challenges to strengthening agricultural innovation systems: where do we go from here? UNU-MERIT Working Paper Series #2007-038. Maastricht: UNU-MERIT.

Klerkx L & Gildemacher P. 2012. The role of innovation brokers in agricultural innovation systems. Thematic note 4. In: *Agricultural innovation systems: an investment sourcebook* (Washington DC: World Bank), pp221–230.

Klerkx L, Mierlo B van & Leeuwis C. 2012. Evolution of systems approaches to agricultural innovation: concepts, analysis and interventions. In: Darnhofer I, Gibbon D & Dedieu B (eds), *Farming Systems Research into the 21st century: the new dynamic* (Dordrecht: Springer), pp457–483.

Knickel K, Brunori G, Rand S & Proost J. 2009. Towards a better conceptual framework for innovation processes in agricultural and rural development: from linear models to systemic approaches. *Journal of Agricultural Education and Extension* 15 (2): 131–146.

Marblé Y. 2012. Creation of communal grazing areas for goats in southern Mozambique: future perspectives. MSc thesis in Animal Science, Wageningen University.

Nederlof ES & Pyburn R (eds). 2012. *One finger cannot lift a rock: facilitating innovation platforms to trigger institutional change in West Africa.* Amsterdam: KIT Publishers.

Tenywa MM, Rao K, Tukahirwa JB, Buruchara R, Adekunle AA, Mugabe J & Wanjiku C. 2011. Agricultural innovation platform as a tool for development oriented research: lessons and challenges in the formation and operationalization. *Learning Publics Journal of Agriculture and Environmental Studies* 2 (1): 118–146.

Triomphe B, Floquet A, Kamau G, Letty B, Vodouhê SD, Ng'ang'a T, Stevens JB, Berg J van den, Sellamna N, Bridier B, Crane T, Almekinders C, Waters-Bayer A & Hocdé H. 2013. What does an inventory of recent innovation experiences tell us about agricultural innovation in Africa? *Journal of Agricultural Education and Extension* 19 (3): 311–324.