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Outcome Mapping as a Monitoring and Evaluation Tool for Livestock Value Chain Interventions: The Case of imGoats

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Background: : The dynamic and complex natures of value chains added up with the multi-layered and open socio-technical systems that are affected by a range of factors and the continuous adaptation processes to changing conditions, makes measuring changes of value chain interventions a challenging task. Selection of M&E approach is dictated by the reality of multiple actors, relationships and perspectives in complex change processes. The traditional M&E approaches and tools specifically the log frame have been criticized for its failure in measuring changes in complex interventions. M&E approaches and tools that are learning focused, flexible, allow involvement of stakeholders, capture unintended results and focus on contribution of the interventions are more appropriate.

Purpose: This paper discussed the process and results of using OM as monitoring and evaluation tool for value chain interventions and reflect on the success, challenges and lessons.

Setting: imGoats project implemented in India and Mozambique with the aim of increasing income and food security in a sustainable manner by enhancing pro-poor small ruminant value chains.

Intervention: The project employed value chain (VC) and Innovations Systems (IS) approaches rather than traditional methods of technology transfer. IS approaches rely on innovation platforms (IPs), which are spaces facilitated by

Research Design: Action research component was superimposed in the project implementation process where data were collected continuously on various aspects. Predominantly, the emic approach is used as most of the authors are directly involved in the action research process. The team had direct exposure in designing and implementing the tool, observing and improving (based on practical experiences and reflections) in the project implementation process. The OM process was continuously monitored and documented with a support from an external consultant.

Data Collection and Analysis: Data were gathered through a multi-method process including review of documents, key informant interviews, focus group discussions and participant observations. Three workshops were conducted at the beginning, midterm and end of the project to evaluate the progress and challenges of OM application. The reports and feedbacks provided by participants in these workshops are one of the data sources for this study. Furthermore, data was collected from project implementation partners on their reflections with regards to OM as M&E tool.

Findings: The findings of the study depict that Outcome Mapping has many demonstrated qualities that makes it suitable for value chain and innovation systems interventions. If properly applied, OM promotes strategic thinking and enhances organizational responsiveness due to its reflective and learning nature. Even if OM requires an environment which promotes participation, learning and flexibility, it could

local innovation brokers where individuals and organizations can come together to address priority issues related to development of value chains. OM was one of the M&E tools used by the project.

bring attitudinal change among those involved in its design and implementation. Due to its flexibility OM can capture unintended effects. Moreover, OM can have parallel positive effects on how partners are conducting project management and monitoring activities. In the action research it was evident that OM is adaptable to different methodologies, contexts and type of interventions. Project/intervention duration has implication to fully utilize OM. As behavioral change is a slow process and needs reasonable time, OM could not be fully utilized in terms of measuring some of the behavioral changes in short duration projects. OM is resource intensive especially when it is used for larger projects. It requires time, skilled manpower and other logistics for collecting and analyzing data. Hence, the investment needs to be carefully balanced against the use of it.

Keywords: *outcome mapping; livestock value chains; food security; international development.*

Introduction

Value chains are by nature dynamic and complex. Whithin the context of the multi-layered and open socio-technical systems in which they are embedded, they become even more so. The range of factors and the continuous adaptation processes to changing conditions make measuring changes of value chain interventions a challenging task (Humphrey & Navas-Aleman, 2009; Humphrey & Navas-Alemán, 2010). Furthermore, outcomes of value chain interventions are not only complicated but also affected by other interventions, projects or policies (Zandniapour et al., 2004; Ton, 2012).

Despite these challenges, evaluating the effectiveness of value chain interventions is essential (Ashley & Mitchell, 2008). Selection of a monitoring and evaluation (M&E) approach is dictated by the reality of multiple actors, relationships and perspectives in complex change processes (Jan Van Ongevalle & Peels, 2014). This is because different approaches have different principles and assumptions (Jones & Hearne, 2009).

The traditional M&E approaches and tools, specifically the log frame, have been criticized for their failure in measuring changes in complex interventions (Swaans et al., 2013; Hummelbrunner, 2010; Roduner, Schläppi & Egli, 2008). These approaches and tools are characterized by positivism, linearity, rigidity, cause-and-effect relationships, and dominated by a focus on quantitative methods, objectivity and accountability (Van Mierl et al., 2010; Roduner, Schläppi & Egli, 2008). Furthermore, evaluations are conducted based on predefined results with less of a focus on learning and integration of stakeholder criteria in the M&E process (ibid).

However, in value chain interventions, the changes are characterized by unpredictable trajectories, which cannot be understood from a reductionist perspective nor through direct cause–effect relationship assumptions (Van Mierl et al., 2010). Hence, for such interventions it is crucial to use M&E approaches and tools that are learning-focused, flexible, allow involvement of stakeholders, capture unintended results and focus on contribution of the intervention. Outcome Mapping (OM) is one of the tools with these attributes (Van Ongevalle & Peels, 2014; Jones & Hearne, 2009; Earl, Carden, & Smutylo, 2001).

OM has been applied in Africa, Latin America, and Asia (Smith, Mauremootoo & Rassmann, 2012). Although the tool has been used in various sectors, there was limited use for value chain interventions. As a result, there is a scarcity of information on the success and challenges of OM as a monitoring and evaluation tool for value chain interventions. Hence, this study attempts to address this gap by reflecting on the use of OM as an M&E tool in the context of imGoats, a value chain project implemented in India and Mozambique with the aim of increasing income and food security in a sustainable manner by enhancing pro-poor small ruminant value chains.

Literature Review

Outcome Mapping: An Overview

Outcome Mapping (OM) is an approach to planning, monitoring, and evaluating social change initiatives developed by the International Development Research Centre (IDRC) in Canada (Earl, Carden, & Smutylo, 2001). OM defines the limits of the influence of a program, promotes appropriate strategies that are in line with the context and recognizes the potential contributions of other actors (Smutylo, 2005). According to OM, transformation and change are not the result of linear casual chains. Rather, they are the result of complex interactions among different actors, forces and trends (Jones and Hearne, 2009). The outcomes of these interactions are changes in behavior, actions and relationships. Consequently, outcomes are defined as "changes in the behavior, relationships, activities, or actions of the people, groups, and organizations with whom a program works directly" (Earl, Carden, & Smutylo, 2001).

OM helps to monitor changes in boundary partners using progress markers and a program's strategies and organizational practices to enhance understanding of how the program has contributed to change. Boundary partners are individuals or organizations with whom the program has direct interactions and can thus influence. Progress markers are a set of graduate-level indicators of behavioral changes to monitor outcomes that may be observed among boundary partners (ibid).

Outcome mapping has three stages and twelve steps. The first stage (with 7 steps), Intentional Design, helps a program clarify and establish consensus regarding the macro-level changes it would like to support. The second stage (with 4 steps), Outcome & Performance Monitoring, helps a program clarify its monitoring and evaluation priorities. Stage Three which is called evaluation planning (with 1 step) assess a strategy, issue, or relationship in greater depth. These stages and steps are not rigid and need to be applied in a

flexible and iterative mode based on the practical context (Earl, Carden, & Smutylo, 2001).

There are key features that differentiate OM from other planning, monitoring and evaluation tools (Smith, Mauremootoo & Rassmann, 2012). The first is its focus on people. As a result, OM shifts the focus of development from bringing changes in state toward changes in the behaviors, relationships, actions or activities of the people, groups, and organizations with whom an intervention interacts directly. This leads to the second principle of OM; it defines outcomes as behavioral changes. The third feature is that OM targets boundary partners as its sphere of influence. It recognizes that different boundary partners operate within different logic and responsibility systems. Hence, it tries to influence the boundary partners to bring behavioral changes within their sphere, and the focus of OM is on these actors in terms of planning and monitoring. Its focus on outcomes rather than impact is the other distinguishing characteristic of OM. Thus, rather than attribution, OM emphasizes the contribution of an intervention. The justification is it is difficult to causally link a given intervention and development impacts. Development requires complex and long-term processes that make it hardly possible to attribute impact to a specific intervention. As a result, OM focuses on outcomes that enhance the possibility of development impact through continuously improving implementation based on feedback information.

OM was not designed as a 'one-size fits all approach' but as an adaptable tool that could be used in conjunction with other tools and processes including the Logical Framework Approach (LFA) (Earl, Carden, and Smutylo, 2001; Smith, Mauremootoo & Rassmann, 2012). Nevertheless, there have been debates on whether OM could share space with LFA. Some argue that LFA and OM have inherently different characteristics that render them incompatible. Others argue that while both have their own weaknesses and strength, it is possible to create a fusion. These advocates stress that its use depends on the context. Some situations would require a fusion, while others either method should suffice. However, This fusion is not without tradeoffs. It has conceptual and practical challenges as "a fusion inevitably leads to con-fusion and more work" (Ambrose & Roduner, 2009), which in turn will have implications for resources. Some authors have gone as far as developing a synthesis model for conceptual fusion of the two approaches (Roduner, Schläppi & Egli, 2008).

Outcome Mapping: Practical Experiences

OM has been applied in different parts of the world across a variety of interventions. It has been used in call world regions with varying levels of success and challenge. In most cases the tool has been adapted to local contexts and project requirements. Smith, Mauremootoo & Rassmann (2012) in their review of ten years of experience with OM around the globe found that OM application has mainly focused on the use of the intentional design stage. However, it is also useful for planning, monitoring and evaluation, and has wider applicability in terms of type of intervention and context.

In Eastern Africa, OM has been used for diverse projects that include interventions addressing livestock and plant diseases, climate adaptations, safe water provision, information communication and better policy and management for pastoral lands (IIRR, 2012). In these interventions, OM was applied mostly in integration with other M&E models like log frame and separately in some cases. Most projects have used some of the stages of OM.

There are few examples of using OM for value chain interventions. One prominent case is from a five-year VECO program (2008-2013) that employed OM in various contexts in its two phases of program implementation in 15 countries in Central and South America, Africa and Asia. In the first phase of the program (2008-2010) VECO developed a contextualized OM-based framework for each objective for the respective region it was operating. Outcome challenges, progress markers and strategy maps for each type of boundary partner were developed together with the respective boundary partners of each specific region. Due to donor requirement to use log frame as a basis for reporting, VECO worked to integrate OM and log frame. In the second phase (2011-2013) VECO changed its program logic and the use of OM elements. Instead of using OM for a specific region, the focus was changed to a specific value chain. As each value chain has its own problems opportunities, the leverage for change and intervention strategies are also different. Therefore, a tailor-made OM framework was required for each value chain (Deprezo, 2013).

Based on a review of the experiences of seven projects in East Africa, IIRR (2012) summarized a number of findings. The report found that OM helps to identify both individual and system-wide constraints and behavioral changes and can influence development of related outcomes beyond the project. Additionally, the importance of developing a common vision amongst the boundary

partners and continuous review of progress markers and outcome challenges were highlighted. Continuous capacity building and coaching of the project team members was also found to be crucial for successful implementation of OM (ibid). The reasons mentioned by practioners in the region for using OM in their projects include: OM allows participation and social learning; It recognizes and systematizes complex situations and relationships; And it improves organizational learning. However, one in five respondents reported that OM is time consuming. Furthermore, limited capacity and experience on OM, convincing colleagues, donors, partners and communities on OM values are some of the challenges mentioned (ibid).

Analytic Framework

The usefulness of planning, monitoring and evaluation frameworks depends on how they are used in practice, their characteristics and values. M&E approaches and frameworks are based on different principles and assumptions about the change process and the role of the program in producing change (Jones & Hearne, 2009). Hence, the choice of M&E approaches should be based on: the characteristics of the changes envisioned; the development approaches being promoted; and the values and principles of the M&E tools and their ability align with the characteristics of the development approaches and of the envisioned changes.

There are key characteristics/principles of OM which could be evident when the approach is appropriately applied. These include:

1. **Learning:** OM is a participatory learning process as it encourages learning through a cycle of planning, action, reflection and learning (Smith, Mauremootoo & Rassmann, 2012). It promotes social and organizational learning, culture of reflection and evaluative and results-oriented thinking. It has cyclical, iterative and reflexive processes aiming at fostering learning about the actors, contexts and challenges. As a result, OM incorporates learning in the project and allows partners use it to influence their actions. OM helps to solve complex problems through these learning, reflection and adaptations processes (Jones and Hearne, 2009). However, application of OM on its own is not a guarantee that learning will happen. For example, the initial excitement about the OM framework at the planning stage could fade with time (Van Ongevalle & Peels, 2014).
2. **Flexibility:** OM is a flexible approach, which is reflected in the variety of ways in which it has been applied. It complements existing practices, particularly those that are established or mandatory. Even where there are institutional barriers to applying OM, there are still ways to incorporate elements of the approach. OM has been adapted to fit a wide variety of contexts, including situations where existing frameworks, such as the log frame, already exist or where the specific tools and language of OM cannot be used explicitly, or where OM is required only for a small part or stage of a project or programme (Jones & Hearne, 2009; Smith, Mauremootoo & Rassmann, 2012; IIRR, 2012).
3. **Participation:** The participatory nature of OM emanates from its demand for dialogue and collaboration among partners. OM has been used in a participatory process by involving various stakeholders. It purposefully includes those implementing the project or program in the design and in data and information collection to encourage ownership, use of findings, and adaptation. It is a consciousness-raising, consensus-building, and empowering method. The process for identifying the macro-level changes, selecting the monitoring priorities, and designing the evaluation plan is intended to be participatory. Wherever feasible, OM should involve the full range of stakeholders (Earl, Carden, & Smutylo, 2001).
4. **Accountability:** OM helps organizations to be more accountable and adaptive (Ongevalle & Peels, 2014). This happens through involving stakeholders and partners in the processes. The emphasis of the of reflecting on relationships and responsibilities and its participatory processes incorporate valuable perspectives. By doing so, it fosters a two-way accountability which is missing in upward accountability-oriented frameworks. OM helps stakeholders to work towards mutual accountability and ownership (Jones & Hearne, 2009). Nevertheless, there is limited evidence that OM helps to satisfy downward

accountability needs of the final beneficiaries (Van Ongevalle & Peels, 2014). Furthermore, OM is helpful in reporting the extent to which Outcomes were achieved and how the interventions have contributed to the attainment of the same. However, in some cases OM information may not be sufficient to satisfy the needs of donors for quantitative information (ibid).

5. **Contribution to changes:** With OM, processes of transformation and change are owned collectively; a complex web of interactions between different actors, forces and trends contributes to the change. In applying the whole OM processes, it will contribute to the achievement of the proposed behavioral change through learning, feedback, participation and capacity building.
6. **The context:** there are some essential enabling factors and contexts that determine whether OM is appropriate and useful for a given intervention. These include: existence of complexity in the intervention environment; recognition of and willingness to act upon complexity in the project environment and an understanding of the rationale for OM application; and champions and the availability of appropriate technical support (Richard, Mauremootoo & Rassmann, 2012). However, having an OM M&E framework alone cannot be considered as a guarantee for 'dealing with complexity' (Deproz, 2013). This depends on the quality of the framework implementation. Furthermore, OM would be the preferred approach for interventions that require working in partnership, capacity building, promoting knowledge and influencing policy and when greater learning, reflection and dialogue is a priority (Jones and Hearne, 2009).

The OM process includes designing, implementation, monitoring and reflection, decision making and adaptation and feedback for future redesign of the process. The process is iterative and open for adaptations and could be affected by the contexts. If the process is applied appropriately the five key characteristics of OM are likely to be evident: flexibility, participatory, mutual accountability, contributions to changes and continuous learning. Figure 1 shows how the OM processes are linked to one another along with key attributes of OM in a given context.

Methods

This paper is a result of action research conducted on the imGoats project. OM was used as a monitoring and evaluation tool along with the log frame approach. A team of researchers and project partner staff were involved in the design and implementation of the outcome mapping in the project in two different contexts; India and Mozambique. The team had direct exposure in designing and implementing the tool, observing and improving (based on practical experiences and reflections) in the project implementation process. Predominantly, the emic approach is used as most of the authors are directly involved in the action research process.

The OM process was continuously monitored and documented with support from an external consultant. Three workshops were conducted at the beginning, midterm and end of the project to evaluate the progress and challenges of OM application. The reports and feedback provided by participants in these workshops are one of the data sources for this study. Furthermore, data was collected from project implementation partners on their reflections with regards to OM as an M&E tool.

Data were gathered through a multi-method process including document review, key informant interviews, focus group discussions and participant observations. Specifically, the data collection methods include:

1. Document review/analysis: various documents were reviewed that include the OM framework, quarterly project reports, OM reports and OM workshop reports. The review helped to understand the intentions, processes and results of the OM application in the project contexts.
2. Explorative interviews with key persons (KII): this mainly included key individuals who have active role in management of the project. These include project coordinators at ILRI and partner institutions and the OM consultant. The questions addressed include how OM was designed, applied in practices, adaptations made on OM, what challenges faced, and lessons learned, etc. The interviews were conducted using a

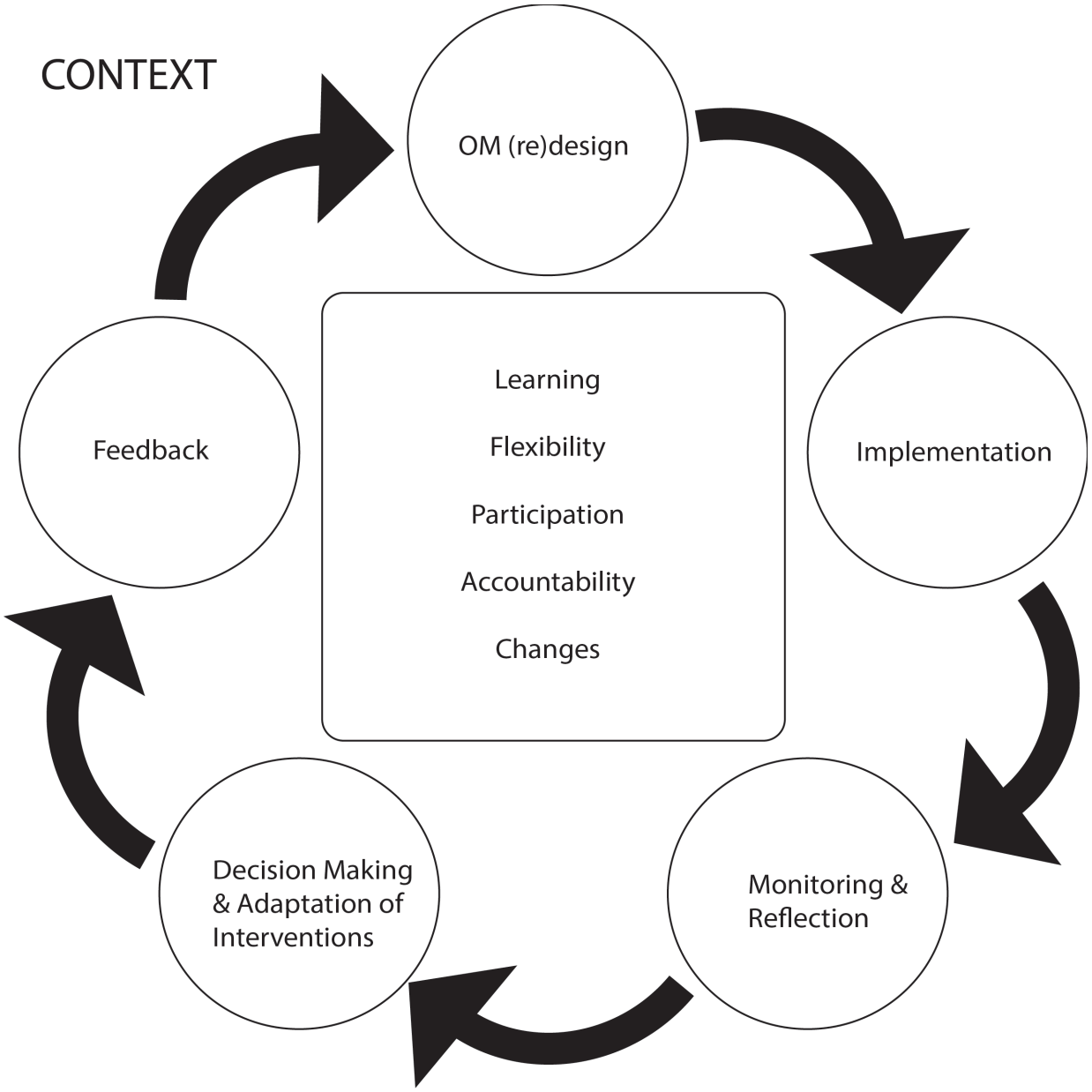


Figure 1. The OM Process, its Key Features and Results.

semi-structured checklist via face-to-face meetings, Emails and Skype depending on the availability of the key persons.

3. Project team reflection/group discussion (FGD): Discussions were held with the project team members who had an active role in the OM design and application to collect information on their observations and reflections. The discussions were guided by a semi-structured interview checklist and the questions addressed include how OM was designed, implemented inpractice, adaptations made to OM, challenges faced, lessons leared, their perception on the usefulness of OM, etc.

As the study is predominantly qualitative, the data were analyzed using categorization, interpretation and summarization methods. The syntheses of the findings are discussed under each topic in the results and discussions sections.

Table 1. Key Characteristics Of The Project Sites. (Source: Project Documents)

Topic	Udaipur District, Rajasthan State, India	Inhassoro District, Inhambane Province, Mozambique
Population Density	196/km^2	11/km^2
Project Households	≈2600	524
Literacy Levels	58.62%	51%(National Statistic)
Rainfall Per Annum	600 mm	600-800 mm
Livelihoods	Small land & livestock holdings (subsistence ag.); wage labor important source of income	Small land & livestock holdings (subsistence ag.); crop production main occupation; cattle numbers very low
Main Crops	Maize, Wheat, Barley, Chickpea, Rape & Mustard	Maize, Groundnuts, Beans, Cassava, Millet
Average Goat Herd Size	6.2 (range 1-16)	8.4(range 1-30)
Marketing Practices	During main festive period (Oct – Dec) and ad hoc throughout year to meet household demands	During festive period (Dec) and ad hoc throughout year to meet household demands
Nearest Goat Market	50 Km (Udaipur)	200 Km (Massinga)
Main Goat Value Chain	Lack of improved bucks; Limited access to animal health services; Low number of goats for sale; limited knowledge of animal husbandry practices	Low number of goats; Limited access to animal health services; lack of organization of producers; lack of infrastructure; Limited knowledge of improved husbandry practices
Main Value Chain Actors	Producers; CAHWs; Local traders/butchers; long distance traders; Local pharmacist; Animal Husbandry Dept; BAIF; Research (IRLI, Veterinary College)	Producers; CAHWs; Local traders/butchers; Local retailers; District (SDAE) & Prvincial (SPP) Veterinary Services; CARE; Research (ILRI)

Results

The imGoats Project

The imGoats project was implemented from January 2011 to June 2013 (30 months) with the aim to transform goat production and marketing in semi-arid areas of India and Mozambique to a sound and profitable enterprise model that would tap into a growing market. The main target beneficiaries of the project were poor goat keepers, both men and women. The overall project was managed by the International Livestock Research Institute (ILRI) and implemented by Bharatiya Agro Industry Foundation (BAIF) and the Cooperative for Assistance and Relief Everywhere (CARE).

The project employed value chain (VC) and Innovations Systems (IS) approaches rather than traditional methods of technology transfer. IS approaches rely on innovation platforms (IPs), which are spaces facilitated by local innovation brokers where individuals and organizations can

come together to address priority issues related to development of value chains.

The project was implemented in two districts; one from India and the other from Mozambique. The specific project area in India was Rajasthan State with 2600 target households in Jhadol and Sarada blocks of Udaipur district. In Mozambique, the project targeted 500 households in Inhassoro district of Inhambane Province. This represented about 3800 direct beneficiaries in 18 villages. Key characteristics of the project sites are described in Table 1.

OM Intention, Design and Application in imGoats

The donor required the use of a log frame as a planning and reporting tool. ILRI proposed the integration of the Outcome Mapping (OM) approach with the log frame to take advantage of OM's strengths. The rationale for a hybrid M&E approach was that OM can be used to develop a map of what progress towards success would look like in terms of changes in behavior of goat producers and other actors in the value chain, which are not easily handled through traditional log frame indicators. Hence, the project had no intention of using OM as a sole M&E tool. Rather, the intention was to align OM with the existing M&E systems of the partners which basically were designed in line with the log frame approach.

Furthermore, it was not intended to apply the whole OM components for the project. Rather, it was planned to use some of the steps of the intentional design and Outcome & Performance Monitoring stages of OM (Table 2). Hence, 7 of the 12 steps were intended to be used. However, it was possible to implement only 6 of the proposed steps in practice.

Table 2. OM Steps Intended and Applied by the Project. (Source: KII with proj. Coordinator & doc. review)

Steps		Intended (in both countries)	Applied			
			India		Mozambique	
Intentional Design						
Step 1	Vision	■		■		■
Step 2	Mission	■		■		■
Step 3	Boundary Partners	■		■		■
Step 4	Outcome Challenges	■		■		■
Step 5	Progress Markers	■		■		■
Step 6	Strategy Maps	■				
Step 7	Organizational Practices					
Outcome and Performance Monitoring						
Step 8	Monitoring Priorities					
Step 9	Outcome Journal	■				■
Step 10	Strategy Journal					
Step 11	Performance Journal					
Evaluation Planning						
Step 12	Evaluation Plan					

Table 3. The Intended & Met Purposes of OM in the Project. (Source: KII w/ project team & partner staff)

Purpose	Intended		Met	
	Mozambique	India	Mozambique	India
Planning	No, the team didn't realize it could be used for planning	yes	Yes, during the OM meetings follow up actions came up which were included in the 3-month planning	Yes, identifying/planning training needs
Monitoring	Yes	yes	Yes	Yes, goat keeper groups and field guides
Evaluation	Yes	Yes	Yes	No, too short project period to evaluate
Reporting	Yes	yes	Yes, progress was included in 6 monthly reports and monthly reports of CARE [project officer	Yes, to some extent it is reported through quarterly reports
Feedback	No, It was never planned to give feedback to project participants based on OM	yes	Yes, feedback was used for project planning and management, but no feedback was given to project participants	Yes, at field level
Decision making	Yes	yes	Yes	Yes, at field level
Accountability	Yes, Accountability to donors about project progress (in addition to log-frame)	yes	Yes, e.g. Accountability of extension officers	Yes, e.g. FG performance monitoring
Learning	No, the team didn't know it could be used as learning tool	Yes	Yes, every monthly meeting the project team learned about the field and progress (lessons learned) e.g. we learned that buyers need more attention	Yes

An OM framework was developed around behavioral changes that imGoats would like to contribute in line with the broader project goals and objectives (Figure 2). The framework was expected to be linked with the broader project goal and log frame objectives. To this end the project log frame was revised in line with the envisioned outcome mapping processes and was used to guide the overall M&E activities of the project.

There were various purposes that OM intended to serve with slight difference between the two countries (Table 3). In India, OM was intended to be used for planning, monitoring, evaluation, reporting, feedback, decision making, accountability and learning purposes. Whereas, in Mozambique OM was not intended to be used for planning, feedback and learning purposes. In practice, however, the Mozambique team reported that they have used OM for planning, monitoring, evaluation, reporting, feedback, decision making, accountability and learning. Likewise, In India OM

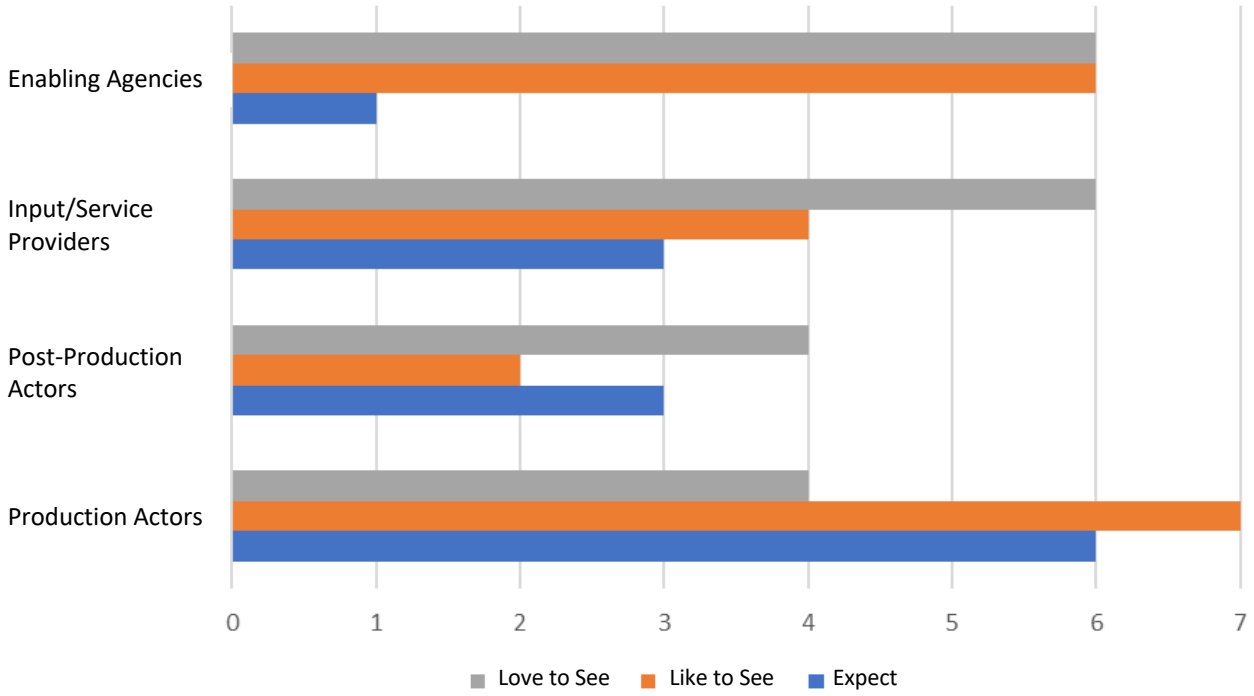


Figure 2. Number of Progress Markers by Level of Outcomes & Type of Actor.

was used for all these purposes except evaluation, as the project period was too short.

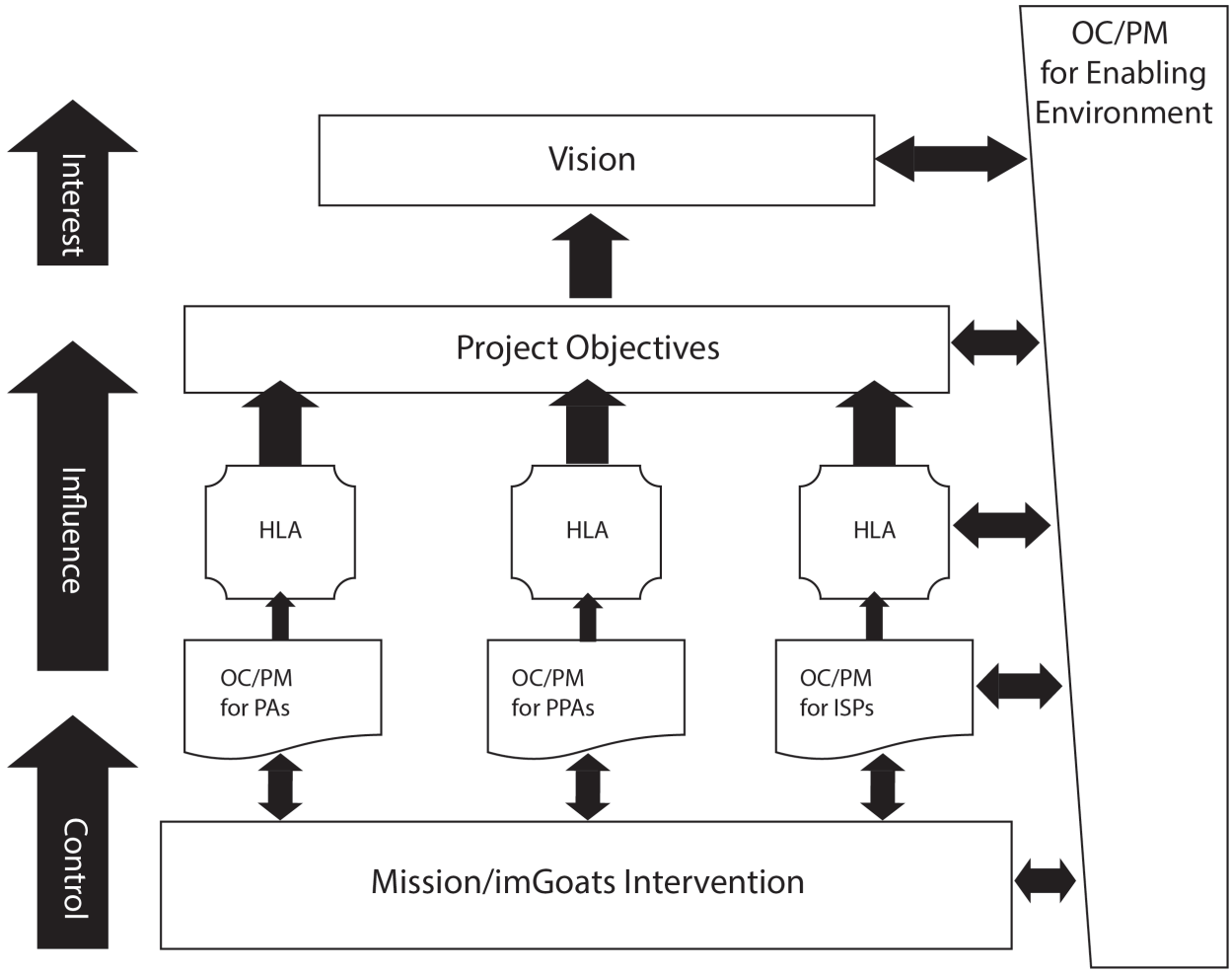
The OM process was designed in collaboration with major project partners and team members. A three-day training workshop was held the on OM processes and principles and was provided for the workshop participants by the consultant. Following this, participants developed the vision and mission statements of the project, identified boundary partners, designed outcome challenges and progress markers facilitated by the consultant.

Four categories of boundary partners were defined for both countries, namely: production actors (goat keepers), input and service providers (paravets/field guides, veterinary doctors from animal husbandry departments, pharmacists), post-production actors (traders/butchers), and enabling agencies (government, research organization, NGO, private investors). For each boundary partner progress markers (PM) were defined for three categories: expect to see, like to see and love to see. A total of 52 indicators were set with 13, 19 and 20 corresponding to expect, like and love to see categories, respectively (see figure 2). In addition, each PM was assigned a subjective measure of what constitutes a high level of achievement.

After this design workshop, the consultant visited both countries with the purpose of refining the progress markers to adapt to each country-specific context, and designing outcome journals and related monitoring tools. About mid-way after the project start up, another workshop was prepared to review the OM implementation process, challenges and lessons to enhance learning between the two countries and improve implementation based on the review.

Application of the OM process commenced after the completion of the design of the necessary tools and orientation was provided to all involved. The OM framework and intervention logic (see figure 3) along with the project log frame were used as a guide for all M&E activities. Due to differences in context, the application of OM was adapted in line with each implementing partner setting. For instance, the data collection process for progress markers (PMs) had slight differences between the two project countries.

In the case of India, the implementing development organization already has an internal monitoring system wherein significant data was continuously collected and therefore no specific demand for developing a new OM journal. Data was collected by 26 field guides on a monthly basis. Each field guide was responsible for collecting information from 100 households. Initially, the data was mainly quantitative and focused on



Key: OC = Outcome Challenge; PM = Progress Markers; PA = Production Actors; PPA = Post-Production Actors; ISPs = Input Service Providers; HLA = High Level of Achievement

Figure 3. Intervention Logic of the imGoats Project Based on OM Principles.

production aspects. In a later stage market-related and qualitative data was also added. In other words, the information collected was modified so that it feeds into the designed PMs. As part of this process, a data entry operator was put in place and data recording sheets were simplified for easy collection of information by the field guides. These guides are goat keepers with minimal education (average of 8 years primary schooling).

In the case of Mozambique, information was lacking for some PMs for which new data collection formats were designed. This additional information was mainly qualitative. CARE and ILRI designed OM journals for CARE extension officers to be filled in on a weekly basis, based on their field observations. However, the extension officers were not familiar with collecting and writing down qualitative information. It was therefore decided to hold OM team meetings (at an interval of 1-2 months) to give the extension officers and other team members the opportunity to share their field observations verbally. The 'OM journals' were transformed into an 'OM facilitator guide' for the meeting. The meetings were held in Portuguese and recorded. English transcripts were prepared and compiled by a CARE volunteer and ILRI researcher, which was an intensive and time-consuming process.

Review of OM in the Context of imGoats

The Context. The project is a multi-partner intervention that includes non-governmental organizations (the implementing partners in both countries), research institutions (mainly ILRI),

governmental organizations and to some extent the private sector. There are differences in project implementation scales, organizational cultures, skillsets and approaches of the implementing partners. The project has major components in facilitation linkages, information sharing though promoting innovation platforms, capacity building and participatory learning. The project mainly targets goat value chain actors. Value chain interventions cannot control the achievement of outcomes but can influence the value chain actors to bring about desired outcomes. These characteristics of the context justify the appropriateness of OM approach for the project (Van Ongevalle & Peels, 2014; Jones & Hearne, 2009).

Flexibility. One quality of OM is its flexibility and ability to align with other methods and M&E systems (Jones & Hearne, 2009; Roduner, Schläppi & Egli, 2008). In imGoats, OM was used next to the existing monitoring systems which predominantly are designed based on LFA. For example, in Mozambique, data on producer group trainings and participation were already collected through the existing M&E system of the implementing partner organization. Likewise, in India rather than developing a new data collection system the implementing partner organization's existing systems were adapted in line with the progress markers developed for measuring changes in the project. The previous system exclusively focused on quantitative data. Hence, the system was adapted to collect and store qualitative data in addition to the quantitative. There were two challenges when integrating OM into the existing system. Firstly, the process was time-consuming as it required understanding the existing systems and how to best fit OM in it. Secondly, at the beginning there were uncertainties as to whether it was possible to integrate OM into the traditional system.

OM is not rigid and some of its stages and steps can be applied based on the context. As discussed earlier (Table 2), not all elements of OM were applied in the project. Given the short duration of the project and the novelty of the tool for the implementing partners, applying the whole OM process seemed unrealistic. The flexibility of OM in terms of partial application has provided opportunity in that few elements could be implemented while still yielding behavioral changes and benefitting from the other qualities of the tool.

Although OM has specific tools for data collection, these were adapted to the project contexts. In India the use of outcome journals has not been taken up because all the progress markers can be tracked through the existing system. However, as discussed earlier the existing system was adapted to collect data in line with progress markers and to capture more qualitative information. In Mozambique, besides using data collected through existing recording forms and reports, outcome journals were designed and used. An additional innovation was the use of oral debriefing of field staff instead of expecting them to keep written OM journals in the field. It was decided to have regular project team meetings to capitalize on field experiences and tacit knowledge of project team members. Both approaches have advantages and disadvantages. The Mozambique approach is good in terms of continuously monitoring behavioral changes and providing feedback to project team to act for improvement. However, it is not based on rigorous data and highly dependent on the extension officers' observations. Conversely, in India extensive data was collected in the outcome journals but there were limitations in terms of continuous synthesis and reflections.

OM has allowed review and adjustment of progress markers based on appropriateness and importance during the project implementation process. Consequently, some were added, while others were no longer found to be appropriate. For example, in Mozambique, interventions on communal grazing areas were not initially planned in the project design but came up during the project implementation. Therefore, a progress marker on communal grazing areas was added at a later stage. In a similar vein, the progress marker "Producers introduce improved breeds in their herds" has been dropped due to the understanding that this PM will not happen in the project period. In India, the progress marker "Paravets/field guides actively aggregating animals at community for animal management and marketing purposes" was initially dropped as it was thought to be not applicable in the field context but was brought back in later when the activity became relevant. There was also flexibility to adapt high-level achievement for progress markers. For example, in India for the progress marker "goat keeper group performance", the project team aimed to set high level of achievement at "100% of groups achieving intermediate maturity level." While implementing the project it was understood by the project team that this level of achievement was unrealistic. Therefore, it was revised to "50% of groups achieving intermediate maturity." Despite flexibility in terms of revising the PM and high level of achievements, the overall framework and the majority of the progress

markers remained valid throughout the project duration.

Participation. The OM framework, progress markers and data collection tools were designed through active involvement of the project partners staff and team. Given the short duration of the project, it was consciously decided to first involve the field teams in understanding the concepts of OM and design of progress markers. Involving all project boundary partners did not seem practical. Likewise, the involvement of boundary partners – beside the project partners – was very limited in terms of OM data collection and analysis, except the field guides had an active role in data collection in the case of India.

In Mozambique all the project team members were involved in the data collection and synthesis activities. As a result, OM created high involvement and commitment among the project team members and contributed to increased insight and enhanced follow-up actions. For example, in one of the monthly meetings while discussing the status of the progress marker "Producers treat their animals regularly and correctly" it was reported that farmers are treating their animals and are paying for paravets services. However, there was an unidentified disease that couldn't be cured by the paravets and some goats had died. Hence, in the meeting it was agreed that action should be taken by extension officers to identify the disease, its causes and possible treatments.

In contrast, the implementation of OM in India has led to a system in which data are more carefully collected and analyzed, producing feedback for field guides. This has given some field guides a sense of purpose instead of routinely collecting data and led to increased involvement and commitment of the field guides and project staff. The case in point is the production and marketing data collected during the monthly home visits of the field guides. This information is quickly reviewed by the project officer in the field and action is taken in case the field guide faces any constraints or problems.

Accountability. Unlike the traditional M&E system that promotes upward accountability, OM could lead to mutual and two-way accountability if properly designed and applied. In the case of imGoats OM helped to spread M&E responsibility among the whole project team. This has led to increased mutual accountability and commitment among project team members. For example, in Mozambique team members had the opportunity to share their observations about boundary partners during the team meetings. As such, the entire team had responsibility in contributing to OM. Hence, in team meetings extension officers are expected to report on their work and the changes they observed which resulted in increased accountability of the extension officers.

In imGoats, OM was used to improve organizational accountability. For example, In India OM has been used to monitor performance of field guides. Similarly, In Mozambique the regularity of OM meetings has led to increased accountability among project team members on what is happening in the field. Some of the data collected through OM has been used for partners' internal and donor progress reporting. However, the reports were not pertaining to the status of each progress marker but mainly on process and outputs along with some outcomes.

OM has helped to monitor intermediate steps towards final outcomes which has contributed to increased accountability and continuous improvement towards achieving the planned outcomes. Through continuous monitoring, it will help to identify areas of weakness, possible actions and responsible parties for improvement, which will help achieveme the various levels of outcomes. This is true especially in Mozambique where the project team meets continuously to review the achievement of behavioral changes, identify gaps and recommend possible actions for improvement. Deproz (2013) also stated that OM has resulted in a series of strategic adjustments in the VECO program.

Strengthening mutual accountability among boundary partners and project implementers through joint involvement in setting targets and monitoring changes is one benefit of OM. However, due to the short project duration, there was limited mutual accountability as there was limited involvement of boundary partners, mainly traders and producers, in the process. Moreover, the fact that there was limited involvement of some boundary partners in design, monitoring and reflection on progress has led to limited accountability of boundary partners towards the overall vision.

Contribution to changes. OM not only has helped to measure results but also contributed to the achievement of outcomes. Some of the changes achieved in imGoats are summarized in Figure 4. Due to the short duration of the project most achievements are observed at the "expect to see"

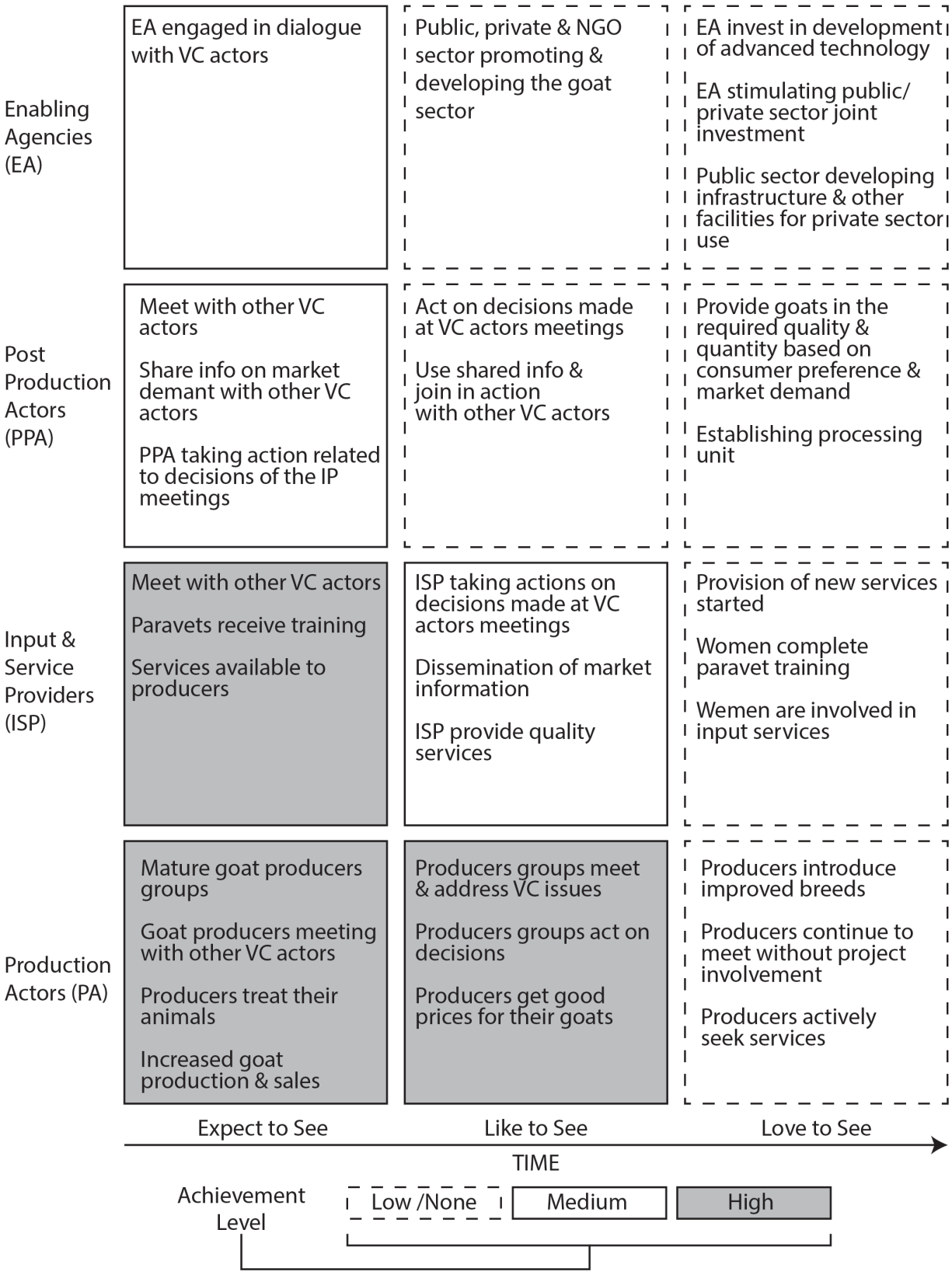


Figure 4. Intended Changes of imGoats & their Level of Achievement. (Source: Outcome journals & reports)

level. The boundary partners that have shown relatively greater changes are production actors and input and service providers.

Due to continuous data collection, synthesis and reflection, OM has contributed to the achievement of planned changes. In Mozambique, for instance, regular reflection on OM data led to suggestions for action points to resolve persistent problems (e.g., involvement of buyers, lack of market, participation of women). Similarly, in India feedback was given to field guides based on the monthly collected data for acting on issues that require improvement.

There are some challenges faced in terms of measuring changes of some boundary partners. For example, the fact that there was less frequent interaction with enabling agencies compared to other boundary partners makes it difficult to observe and report behavioral changes. Moreover, progress markers for enabling agencies may not have been very appropriate or realistic. For instance, some of the progress markers in India for enabling agencies such as "Enabling agencies investing in development of advanced technologies" or "Stimulating public-private sector joint investments" were beyond the scope of the project period. This suggests the need to be specific in the definition of enabling agencies (for instance to focus more on local enabling agencies) and their progress markers.

One of the good qualities of OM is its ability to capture unintended effects of interventions. For instance, there was no plan to develop communal pasture areas and use of model farmers for promotion of improved technologies and practices. However, during the project period these issues emerged, and the changes were measured using newly-developed progress markers. OM also brought unintended changes in terms of partners' M&E and management practices. For instance, In India, the OM has led to improved use of existing data, with potential constructive changes in the modus of operandi (from production towards a more market-centered approach). Moreover, the acceptance of qualitative data for M&E purposes can be translated into easy-to-use tools or formats that invite people to be actively involved.

Learning. OM promotes continuous learning throughout project planning, implementation and M&E processes. In imGoats, the implementation of OM was an experiment and a learning experience among project partners. Few project staff involved in the design and implementation of OM had ever used OM in practice or even known about the tool. For instance, only 20% of the first OM workshop participants reported having some exposure to or knowledge of OM.

The development organization implementing the project in India has a culture of target-oriented approaches with a focus on collecting data for reporting purposes and meeting targets. It has not used participatory approaches that emphasize providing feedback to the grass-roots level. The emphasis on participation, feedback and behavioral change was new. Hence, in the process of designing and implementing OM the project partners had the chance to learn these and other characteristics of OM. Some of the lessons participants in both countries mentioned include understood the purpose of data collected, the importance of regular monitoring, the usefulness of OM for monitoring behavioral changes, the importance of having sharp vision of changes anticipated, and OM's usefulness in answering the 'why' question.

Both implementing partners (especially the development organization implementing the project in India) had more experience with collecting quantitative data. Collecting and using qualitative data was a challenge and a learning experience, especially in India. For instance, in India it was difficult for field guides to collect qualitative data due to their previous experience in filling quantitative data formats. Likewise, in Mozambique, extension officers were not used to writing down qualitative data (text) – they usually collected numbers. However, through continuous support and training by project staff, they have started to appreciate the importance of qualitative data and the ability to collect qualitative data.

Huge data collection activities were conducted by the implementing nongovernmental organization in India through their existing system. However, the data collected were not used optimally. The introduction of OM helped to focus on specific data which is important to measure progress towards development outcomes and is useful as feedback for learning. As a result, the data collection process became purposeful and the quality of data improved.

There was regular data collection and reflection on OM progress markers that enhanced learning among the project team of Mozambique. However, in India, OM data were only analyzed against each progress marker. The achievement status of each was assessed at mid-term and at the end of the project. Nevertheless, there was regular analysis of data collected which was discussed with field guides on a monthly basis. In Mozambique OM helped field staff to look at what was happening in the field from a different perspective, in the sense that OM required observation of behavioral changes. Such

observations had not been done before by the extension officers.

OM helps organizations to document, learn from and report on their achievements. Hence, documentation was perceived as very useful. But it requires a systematic process, time and skills, which are often not present or valued within development organizations. For example, documentation of the team meetings in Mozambique required strong skills on note-taking and transcription, which was rather time consuming. Other authors also mentioned that limited facilitation skills, resources and time are key restraining factors for successful implementation of OM (Van Ongevalle & Peels, 2014).

OM has helped to understand and follow up on the progress of boundary partners and gain a better understanding of performance in the field. For example, in the OM team meetings in Mozambique after discussing why certain changes had occurred or not, follow-up actions were defined. The consensus of the implementing partner in Mozambique was that OM enabled them to capture developments and trends throughout the project that enabled them to be more responsive and adaptive. There is supporting evidence from the literature that OM is helpful for enhancing program adaptive capacity (ibid).

Discussion and Implications

OM is suitable for interventions that use value chain (VC) and innovation systems (IS) approaches. The inherent characteristics of these approaches demand the use of OM. Both approaches are characterized by complex processes aiming at bringing changes in the behavior, actions, and relationships of actors. However, the application of the tool for large interventions would be more challenging. Deproz (2013) discussed the implication of size of intervention in application of OM for M&E.

OM not only promotes strategic thinking but also enhances organizational responsiveness due to its reflective and learning-oriented nature. It can help organizations involved to be responsive to emergent issues if there is continuous data collection, analysis, and reflection. However, it is important to note that responsiveness requires institutional capacity.

Top-down, target-oriented, and rigid attitudes could be challenges at the beginning when applying OM. However, if there are champions to promote the use of OM, due to its flexible, learning and participatory nature it will help to change these attitudes of partners as they engage the OM process. Still, willingness and commitment of managers and those involved is highly important. Other authors have acknowledged the importance of champions and commitment for the successful application of OM (Smith, Mauremootoo & Rassmann, 2012).

Due to its flexibility, OM can capture unintended effects. Moreover, OM can have parallel positive effects on how partners conduct M&E activities. For instance, it could improve data collection, analysis, and use systems of partner organizations. However, OM requires intensive documentation so that it can be used for learning and improvement. This in turn calls for systematic processes, time and skill.

Project/intervention duration has implications for the extent to which OM can be implemented. As behavioral change is a slow process and needs reasonable time, OM may not be fully implemented in terms of measuring some of the behavioral changes in short-duration projects. On the other hand, the fact that behavioral changes are categorized as expect, like and love to see helps to measure changes incrementally across time.

Involvement of boundary partners in the whole OM processes is crucial. As boundary partners have greater control of the anticipated behavioral changes, it is mandatory to involve them in the process. They should decide how, when, and why they will change and participate in the vision, mission, and progress markers-setting process, as well as how to monitor changes and use the results for performance improvement. This will motivate partners to work towards the achievement of the anticipated behavioral change while also creating a sense of responsibility and accountability. In a similar study it is reported that boundary partners are highly motivated to engage actively in an intervention and share their information if they are involved in the OM designing process (IIRR, 2012).

OM is resource-intensive, especially when it is used for larger projects which tend to produce huge amounts of data (Deproz, 2013). As a result, it requires time, skilled manpower and other resources for collecting and analyzing data. Therefore, the investment needs to be carefully weighed against the burden of implementing OM. Mechanisms could be designed to make it less resource-intensive. Likewise, capacity building should be an integral part of OM applications, with an emphasis on continuous training, technical support and backstopping. Hence, besides using external OM expertise it is important to develop internal OM support systems.

One of the pertinent characteristics of OM is its adaptability to different methodologies, contexts and type of interventions. Furthermore, the steps and principles can be applied flexibly. This flexibility of OM could, however, lead to difficulty in defining its identity. For instance, Smith, Mauremootoo & Rassmann (2012) define OM as any PME approach that used one or more of the OM steps exclusively. This suggests that there should be some defining characteristic or common features of OM that need to be evident despite its flexible applications.

The flexibility traits of OM allow its use as a hybrid M&E approach along existing M&E systems. However, OM should not be considered a panacea. The realization of its advantages is highly dependent on how it is implemented in practice. There is supporting evidence from other studies. For instance, Deprezo (2013) contemplates that the use of OM at its full potential for managing complex processes is completely reliant on the quality and nature of the monitoring practice.

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