Outcome Mapping as a Monitoring and Evaluation tool in Resilient Food Systems Programme in Uganda and Nigeria

A dissertation submitted in partial fulfilment of the requirements for the degree of Master of Science (MSc) in Sustainable Tropical Forestry (SUTROFOR),

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ETHICAL STATEMENT

This research was screened under Bangor University Research Ethics Framework, no issues were identified.

ABSTRACT

Resilient Food Systems (RFS) programme aims to respond to the chronic food insecurity and targets in fostering sustainability and resilience among smallholder farmers in 12 sub-Saharan African (SSA) countries. This research investigated the potential for OM methodology in the RFS project in Karamoja subregion of Uganda and northern Nigeria. This qualitative study offered OM training sessions that trained the participants from both countries to identify project vision, mission, boundary partners, outcome challenges, progress markers, strategy maps, and organizational practices. The participants used OM methodology to track the behavioural change in the boundary partners involved in the RFS projects. Participants from both countries identified 4-5 important RFS project boundary partners that need behavioural changes and defined outcome challenges, progress markers and strategy maps for each of them. RFS Uganda identified Local Farming Communities (Smallholder farmers, women, and youth) who were also the ultimate beneficiaries, National Steering Committee, Local Government, Media, and the Implementing Partners as the most important BPs. Similarly, Smallholder farmers (women and youth), Federal Ministry of Agriculture, ADPs of all 7 states, Private sectors, and Media were identified as the most important BPs by RFS Nigeria. This study concludes that OM methodology can be implemented to track behavioural changes in Boundary Partners involved in RFS projects. To incorporate tracking of behavioural change into the project monitoring and evaluation plan, it is important to configure and adjust OM methodology to the country's specific contexts and phases of RFS projects. When continued in other RFS countries, it should incorporate gendered perspectives in every OM stage possible.

The data obtained during this thesis was mainly used to write this MSc dissertation. It was also used to contribute to a project report and research paper informing Uganda, Nigeria, and other RFS countries about project scaling and policy influence using OM as a method for Monitoring and Evaluation (M&E). This research contributes to the overall SSA Food Security and Sustainability Goals of the RFS as well as one of the objectives of ICRAF to address the Sustainable Development Goals (SDG) 2 aimed at ending poverty, achieving food security and improved nutrition and encourage sustainable agriculture.

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ACRONYMS

AFRII	Africa Innovations Institute
BP	Boundary Partner
CSA	Climate-Smart Agriculture
CSoC	Critical Stories of Change
EP	Evaluation Plan
FAO	Food and Agricultural Organization
GAP	Good Agricultural Practices
GEF	Global Environment Facility
ICRAF	World Agroforestry
ID	International Development
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
M&E	Monitoring and Evaluation
MAIIF	Ministry of Agriculture, Animal Industry and Fisheries
MP	Monitoring Priority
MSC	Most Significant Change
MWE	Ministry of Water and Environment
NGO	Non-government Organization
NRM	Natural Resource Management
OC	Outcome Challenge

OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OJ	Outcome Journal
OM	Outcome Mapping
OMg	Gendered Outcome Mapping
OMLC	Outcome Mapping Learning Community
OP	Organizational Practice
PIR	Project Implementation Review
PJ	Performance Journal
PM	Progress Marker
PME	Participatory Monitoring and Evaluation
RFS	Resilient Food Systems
SDG	Sustainable Development Goals
SJ	Strategy Journal
SLWM	Sustainable Land and Water Management
SM	Strategy Map
SSA	Sub-Saharan Africa
ToC	Theory of Change
UBOS	Uganda Bureau of Statistics
UNDP	United Nations Development Project
USAID	United States Agency for International Development

WFP	World Food Programme
WOFAN	Women Farmers Advancement Network

GLOSSARY

Table 1: Terminologies and their definitions

The definitions provided here were derived from Earl et al., 2001 unless stated otherwise.

Terminology	**Definition**
Boundary Partners	Those individuals, groups, or organizations with whom the program interacts directly and with whom the program can anticipate some opportunities for influence.
Intentional Design	The planning stage of Outcome Mapping, where a program reaches consensus on the macro-level changes it would like to help bring about and plans strategies to provide appropriate support.
Mission	An ideal description of how the program intends to support the achievement of the vision. It states with whom the program will work and the areas in which it will work but does not list all the activities in which the program will engage.
Organizational Practices	Eight separate practices by which a program remains relevant, innovative, sustainable, and connected to its environment.
Outcome	Changes in the behaviour, relationships, activities, and/or actions of a boundary partner that can be logically linked to a program (although they are not necessarily directly caused by it).

Outcome Challenge	Description of the ideal changes in the behaviour, relationships, activities, and/or actions of a boundary partner. It is the program's challenge to help bring about the changes.
Outcome and Performance Monitoring Stage	The second stage of Outcome Mapping. It provides a framework for the ongoing monitoring of the program's actions in support of the outcomes and the boundary partners' progress towards the achievement of outcomes. It is based largely on systematized self-assessment.
Outcome Journal	A data collection tool for monitoring the progress of a boundary partner in achieving progress markers over time.
Performance Journal	A data collection tool for monitoring how well the program is carrying out its organizational practices.
Progress Markers	A set of graduated indicators of changed behaviours for a boundary partner that focuses on the depth or quality of change.
Strategy Journal	A data collection tool for monitoring the strategies a program uses to encourage change in the boundary partner.
Strategy Map	A matrix that categorizes six strategy types (causal, persuasive, and supportive), which a program employs to influence its boundary partner. Strategies are aimed at either the

	boundary partner or the environment in which the boundary partner operates.
Vision	A description of the large-scale development changes (economic, political, social, or environmental) to which the program hopes to contribute.

1. INTRODUCTION

1.1. Background and Justification

Development is about people relating to each other and their environments (Earl et al., 2001). The participatory concept and people-centred development approach started since the 1970s (Hollnsteiner 1977). Since then, different perspectives on the theory and reality of the developments have been appearing both within and through various development paradigms (Parpart and Veltmeyer, 2004). For example, a widespread quest had begun in the 1980s for a new and innovative model of development that would be more egalitarian, socially inclusive, and sustainable (Goulet 1989; Gran 1983; Rahman 1991). This search for alternative development took various forms such as concerns for gender inequality and oppression, women empowerment (Ahooja-Patel 1982; Gran 1983; Parpart et al., 2003), the concept of sustainable livelihood approach, and the notion of pro-poor development (Amalric 1998; Chambers 1987; Helmore and Singh, 2001).

At present, international development (ID) projects are known as foundations of foreign assistance to the developing countries (Golini and Landoni, 2014). However, there are some concerns that ID projects sometimes can be inefficient and ineffective (Lovegrove et al 2011; Ika et al 2012). This has triggered a demand for improved planning, management as well as the impact evaluation process for non-government organizations (NGOs) (Ebrahim 2003a, 2003b) to strengthen the social impact of their projects (Becker and Vanclay 2003). There is a need for administrative strategies to ensure 'social impact assessment' that tracks, monitors, and manages both positive and negative, intended, and unintended social changes brought by these international project interventions (Vanclay 2003). Sheriff and Schuetz, (2010) also mention the practical need to incorporate alternate methods for monitoring and impact assessment especially in a large-scale, multi-country project. The success and impact of a project, in the past, was measured against its number of publications in peer-reviewed journals, which is not enough anymore (Pasanen et al., 2018). Today, it is expected that the development projects lead to a broader change, influencing outside of academia and moving beyond publishing by looking at the

bigger picture where projects identify outcome level changes as well as to measure those development results systematically (ibid). Monitoring and Evaluation (M&E) is a management tool that measures and assess the performance of a project based on past and current practices, helps to decide if the development is moving in the right direction – the direction of progress and success, and provide pathways to effectively manage development outcomes and outputs in the future (UNDP, 2002)

The Resilient Food Systems (RFS) programme on food security in sub-Saharan Africa (SSA), formerly known as the Integrated Approach Programme (IAP), funded by Global Environment Facility (GEF), implemented by the International Fund for Agricultural Development (IFAD), and supported by World Agroforestry (ICRAF), is a large-scale development project that focuses on promoting sustainability and resilience for food and nutrition security through sustainable management of natural resources. It targets in fostering sustainability and resilience among smallholder farmers in 12 African countries, including Uganda and Nigeria (Pagella and Mollee, 2019). Working with RFS, this study developed a specific Monitoring and Evaluation (M&E) framework using Theory of Change (ToC) and Outcome Mapping (OM) methodology to design a way of tracking progress for RFS study in Uganda and Nigeria. It is based on the ToC approach which encourages project-level changes (attitude and behaviour change), aggregated programme-level changes (practice and policy change) and macro-level changes (political and institutional changes) at a national, regional, or international level (Vogel, 2012a). This study explored the use of OM to measure outcome level changes and help integrate that knowledge back into policies and relevant initiatives for stakeholder engagement. People and development are at the centre of OM and the core belief of this approach is that understanding the influence of a development initiative on stakeholder behaviour and relationships is crucial for recognizing wider changes throughout the project cycle (Vogel, 2012a).

1.2. Objectives

1.1.1. General Objective

The general objective of this study was to develop a specific Outcome Mapping (OM) framework and to design a way of tracking (monitoring and evaluation) progress for RFS project.

1.1.2. Research Question

Can OM methodology be implemented to track behavioural changes in boundary partners involved in RFS?

1.1.3. Specific Objectives

1. To investigate the potential for OM methodology in the RFS project in Karamoja subregion of Uganda.
2. To investigate the potential for OM methodology in the RFS project in northern Nigeria.

More specifically for each of these two countries, the sub-objectives are:

i. To identify project vision and mission.
ii. To identify project boundary partners.
iii. To identify outcome challenges.
iv. To identify progress markers.
v. To identify strategy maps.
vi. To identify organizational practices.

1.3. Hypothesis.

OM methodology as a tool of the ToC approach can be executed to track behavioural changes in project boundary partners involved in RFS project.

2. LITERATURE REVIEW

2.1. Monitoring and Evaluation (M&E)

Monitoring is described by United Nations Development Project (UNDP) as an ongoing system where stakeholders receive frequent feedback on the advances made in achieving their objectives and priorities while evaluation is defined as an independent review of existing or completed activities to estimate the degree to which they are achieving their organizational objectives to influence decision-making (UNDP, 2009; Ika et al 2012). In other words, monitoring sets the goals and project success indicators and evaluation assess the relevance, impact, and sustainability of the project (Tengan and Aigbavboa, 2017). According to (Bourne, 2010),

traditional M&E in development projects was carried out by external experts who used questionnaire surveys against predetermined indicators to provide verification to appease funding agencies and donor. Therefore, traditional M&E tools and frameworks have been frequently criticised for focusing too deeply on donor accountability at the cost of various forms of reflection and learning that may enhance decision-making at project level (Ramalingam *et al*., 2019). Nevertheless, there is a steady paradigm shift from traditional M&E towards a participatory approach to M&E that requires recognizing all internal stakeholders as well as external facilitators to partake in the project planning and evaluation (Bourne, 2010). There is a growing demand to enhance our understanding of how M&E frameworks can go beyond the conventional approach to influence decision-making and help bring about social changes (Ika *et al* 2012). According to The World Bank, Participatory Monitoring and Evaluation (PME) approach includes the active engagement of primary stakeholders and supports their capacity building. Unlike traditional M&E approach, PME advocates shared learning among the stakeholders and encourage joint commitments to achieve organizational objectives (Gujit *et al* 1998).

A guide developed by ACT Development to assess project contributions to change offers an overview of 24 participatory M&E tools such as Çritical Stories of Change (CSoC), Most Significant Change (MSC), Outcome Mapping (OM), Theory of Change (ToC), to help project managers and evaluators in a deeper understanding of change and its assessment and assist them to set policy direction and resource allocation for impact assessment (Hawkey *et al*., 2007). This guide provides readers with usefulness ratings ranging from 1 (low) to 5 (high) assigned to each tool concerning 17 criteria addressing some of the methodological challenges encountered in assessing change (Appendix 1). The authors and/or other specialists contributed in rating these criteria including – 'Impact as well as outcomes' which looks into the extent to which the tool seeks to study the impact, 'Attribution of change' which looks into how well the tool deals with attribution of change and the exploration of cause-effect relationships, 'Proving, giving evidence for accountability' looks into the extent to which the tool provides evidence of change, 'Transparency and feedback' looks into the extent to which the tool incorporates feedback on findings to implementing staff and those being assessed (Hawkey *et al*., 2007, p. 30) and more

(see Appendix 1 for all 17 criteria for 24 M&E tools). Among the 24 tools summarized by ACT Development guide, Outcome Mapping (OM) totals the highest score with 76 and Theory of Change (ToC) totals to 67. OM and ToC complement each other strongly as each criterion is strong when these two approaches are used together. Appendix 2 and 3 provides the summary of OM and ToC respectively, explaining the purpose, origin, scope of application, its steps, advantages, limitations, and resource implications.

2.2. Theory of Change (ToC)

Theory of Change is an M&E tool that sees the project as a closely linked set of assumptions and ideas such as "if right knowledge then right attitude and if right attitude then right practice" (Hawkey *et al*., 2007, p. 78). The ToC approach evaluates the degree to which the hypotheses of the project is progressing in relation to the development of participants' knowledge and their attitudinal and behavioural changes. It is an outcome-based approach (Vogel, 2012b) that encompasses practitioners, operational managers, and stakeholders in a 'facilitated process of analysis and reflection' (Allen *et al*., 2017, p. 957). With the ToC approach, the fundamental change desired from the project is defined by the stakeholders, and through the process of 'backwards mapping', changes/outcomes are identified which will significantly contribute to achieving the ultimate change. Further, outcome-indicators are established to track progress over time and finally, interventions are developed to achieve those outcomes (Hawkey *et al*., 2007).

For instance, by installing purification filters, a project's purpose might be to provide communities with access to cleaner water. Traditionally, counting the number of filters installed and calculating changes in the number of pollutants in the water (before and after the filters were installed) would be the method of determining the outcomes of this project. Instead, an emphasis on behavioural changes starts with the idea that water does not stay clean without individuals being able to preserve its consistency over time. Therefore, the results of the project are measured in terms of whether those responsible for water purity in the communities not only have, but also use, the requisite instruments, expertise, and awareness to track the levels of pollutants, to adjust philtres, or, if necessary, call in experts (Earl *et al*., 2001, p. 2)

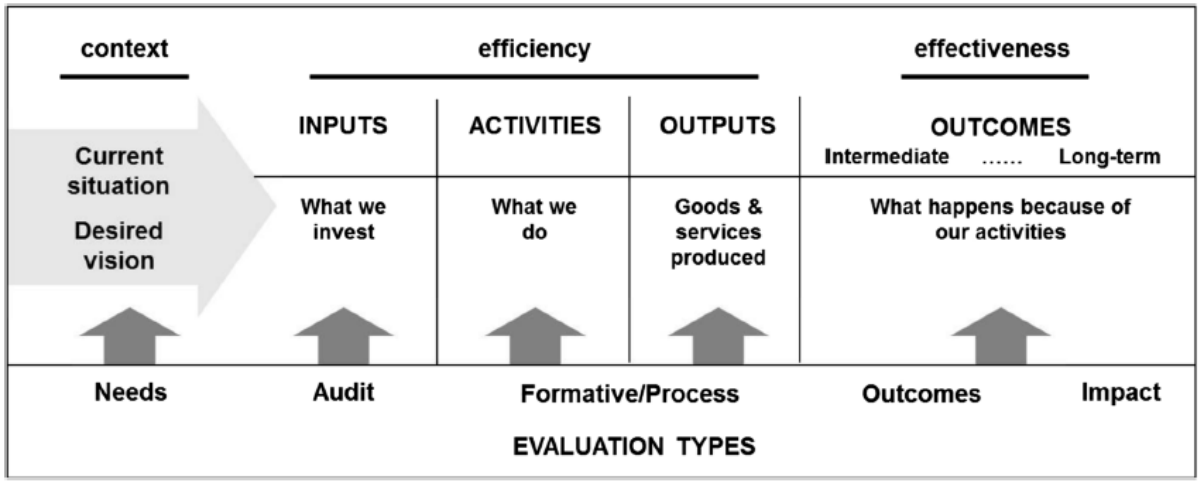

Figure 1: Key project elements (inputs, activities, outputs, and outcomes) and suitable monitoring and evaluation types for each element phase of a ToC approach.

Source: Allen et al., (2017, p. 958).

Generally, on-the-ground decisions are taken by operational managers; however, other stakeholders have the power to influence the decision by either opposing or supporting the context (Allen *et al*., 2017). According to Weiss (1995), with a ToC approach, stakeholders need to work together with operational managers in order to outline the program in a sequence of inputs, activities, outputs, and outcomes (Figure 1). The ToC approach urges questioning 'what might influence change' and enables an adaptive management strategy (Blackstock *et al*., 2007) which means 'learning by doing' (Blackstock *et al*., 2007). It also guides stakeholders to assess and adapt progress towards attaining anticipated outcomes (Blackstock *et al*., 2007). The evaluation in the ToC approach not just values the degree of change but also helps to comprehend reasons for the change (or no change), thus advocating learning and adaptive management (Weiss, 1995).

A ToC approach to planning and evaluation for research, development and management programs has been used for a long time (Connell and Kubisch, 1998). Anderson (2005) explains how the ToC approach not only guides stakeholders towards coveted short-term, medium-term, and long-term outcomes but also helps to realise most significant outcomes, gives insights into what influences them and provides ways to evaluate them. However, the ToC approach has been

criticized for being a far too linear model (Taplin and Clark, 2012; Vogel, 2012b). The ToC assumes inputs lead to outputs, and outputs lead to outcomes (Figure 1) which is not always the case because project inputs, activities and outputs influence project outcomes in multiple ways, sometimes in unpredictable ways (Taplin and Clark, 2012). Nevertheless, it is crucial to understand that instead of answering the question of 'how change happens', ToC answers the question of 'how we believe change will happen' and based on this understanding ToC explains 'how are we going to intervene' (Vogel, 2012a). The ToC is progressive and logical, and it reflects the causality of change. It is a flexible approach that makes the stakeholders think through underlying questions and assumptions, focus on the impacts of their interventions and, accept their role in change 'as a small part of a larger whole—rather than change as a linear process' (James, 2011). Therefore, the linear model of ToC is justifiable (Taplin and Clark, 2012).

2.3. Outcome Mapping (OM)

'Outcome Mapping (OM)' is a specific tool for the ToC. It is a planning, monitoring, and evaluation tool that is designed for collecting data on immediate as well as long term changes. "OM is a research methodology designed by International Development Research Centre (IDRC) for planning, monitoring and evaluation of development initiatives that aim to bring about sustainable social change and focuses primarily on change processes and outcomes as 'behavioural change' rather than impacts" (Pagella and Mollee, 2019, p. 4). It puts people and learning at the centre of development and gathers information on actions and behavioural changes of the actors in the project, intentional as well as unexpected changes (Earl *et al*., 2001). According to the Outcome Mapping Learning Community (OMLC), there are 3 key concepts of OM:

i. Sphere of influence

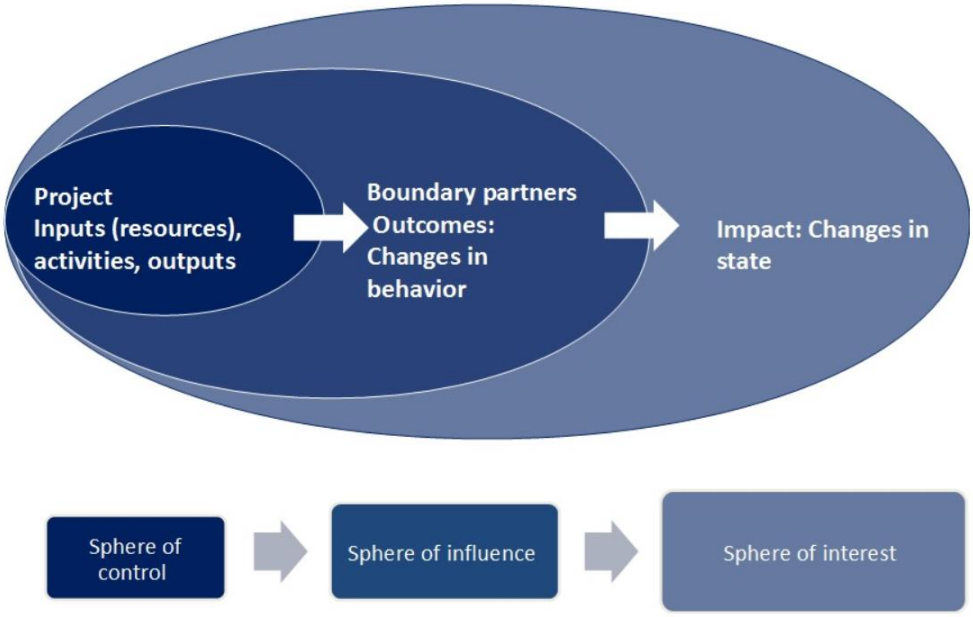

Figure 2: Spheres of Influence in a project. Source: OM Community Learning Webinar.

Source: Hearn, S., (2011).

ii. Boundary Partners

Boundary Partners are not stakeholders, but a subset of stakeholders. Project Management Institute defines the term project stakeholder as, "an individual, group, or organization, who may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project" (PMBOK Guide, 2017; p.550). The Outcome Mapping Learning Community Guide (OMLC) implies that OM distinguishes stakeholders in a project based on their functions and commitments, outlines how their professional relationships are connected to the expected outcomes, and elucidates which stakeholders the project will devote its time and resources in to achieve its vision and mission (Ambrose and Deprez, n. d). The categorization as a 'Boundary Partner' represents how the project sees a stakeholder (both within and outside the project's sphere of influence) and states which stakeholder will the project focus and invest its resources on for their behavioural change.

iii. Outcomes understood as changes in behaviour

In Outcome Mapping, "outcomes are defined as changes in the behaviour, relationships, activities, or actions of the people, groups, and organizations with whom a program works directly" (Earl *et al*., 2001, p. 1). Outcome Mapping is focused on the premise that by fostering behavioural change among individuals and organizations, project growth is achieved. It contradicts more conventional monitoring and evaluation methods by withdrawing from the assessment of projects based on the attainment of specific indicators and achieving only quantitative objectives (Shams, 2009).

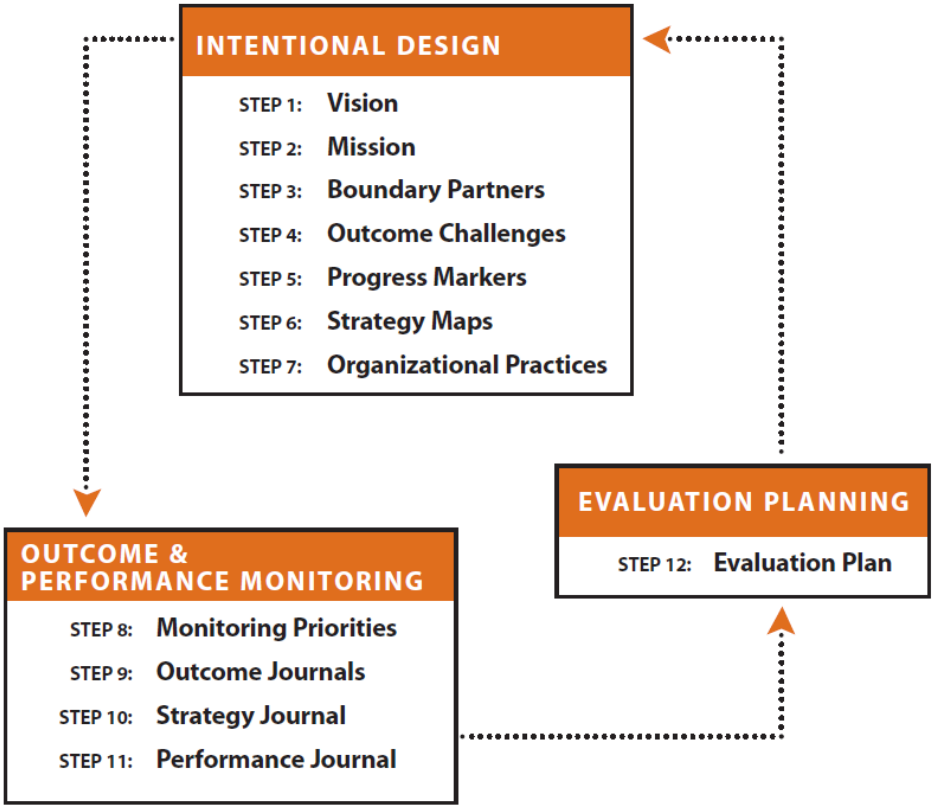

Figure 3: Three stages of Outcome Mapping.

Source: Earl et al., (2001, p. 4).

There are three stages and twelve steps in the OM process (see Figure 3 and Table 2). Intentional design, the first stage, helps the project identify its desired macro-level changes by answering four questions – "why? (vision); who? (boundary partners); what? (outcome challenges and progress markers); and how? (mission, strategy maps and organizational practices)" (Earl *et al*.,

2001, p. 17). The second stage, Outcome and Performance Monitoring, with the help of progress markers – "a set of graduated indicators of the behavioural change identified in the intentional design stage" (Earl *et al*., 2001, p. 18), helps to develop a framework to monitor performances, reflect on them, improvise on them and follow up on the project's work with the boundary partners. Finally, in the third stage, Evaluation Planning, an evaluation design with prioritised evaluation elements is formulated (Earl *et al*., 2001)

Outcome Mapping significantly varies from the conventional logic models because instead of trying to monitor and evaluate all aspects of the project with one set of tools, it identifies three separate but strongly interrelated sets of events and improvements (Figure 4), and provides tools to control each one. It also tracks the policies (strategies) and operational activities (organizational practices) of the project to improve awareness of how the project has responded to progress, in addition to documenting changes in boundary partners (Earl *et al*., 2001).

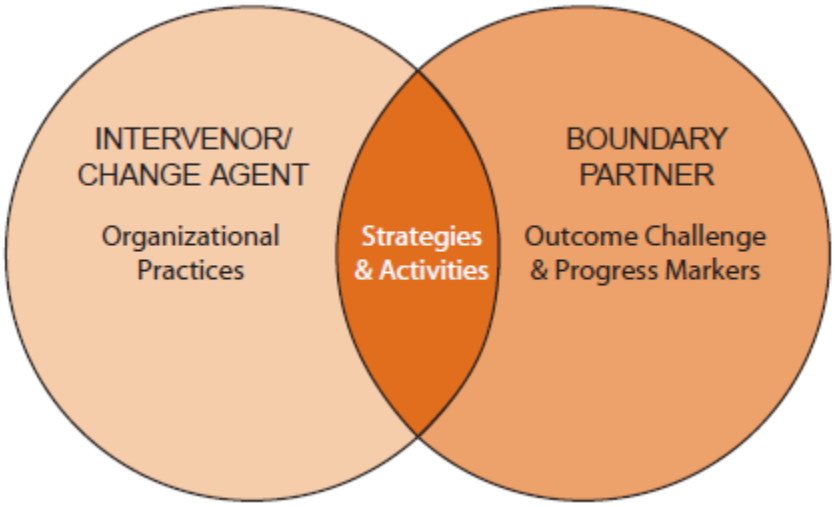

Figure 4: 3 distinct sets of activities and changes on the spheres of monitoring in OM.

Source: Earl et al., (2001, p. 13).

OM methodology offers a methodological structure to assist the team members of a project to design appropriate strategies and processes to map behavioural changes in the project actors recognized. To do this, OM follows specific steps (Table 2).

Table 2: OM Steps explained

S.N.	OM Steps	Brief description
1.	Vision	The vision represents the large-scale evolutionary changes the project aims to promote. It explains the economic, political, social, and environmental improvements as well as broad behavioural changes in key stakeholders the project aims to bring about. The vision's ultimate goal lies beyond the capacities of the programme; nevertheless, its efforts should promote and lead the pathway to the goal.
2.	Mission	The mission is the reflection of how the project intends to support the vision. Having said that, it is not the comprehensive list of all activities to do but rather an expression of what the project aims to develop into as it supports the success of the vision.
3.	Boundary Partners (BPs)	Boundary Partners are the key people, groups and/or organizations the project works together with and provides development opportunities to, that illustrates advancement towards the vision. While they work together with the project to bring changes, they do not control the project but rather possess the power to influence project development.
4.	Outcome Challenges (OCs)	Outcome Challenges are the consequences of the project's existence with an emphasis on behavioural change. If the programme is exceptionally successful, then an outcome challenge defines the transition of a person, community, or organization towards the behavioural change.

5.	Progress Markers (PMs)	Progress Markers are indicators of success for each outcome challenge the project is pursuing. They demonstrate the intricacy of the change process linked with each BP and are used to track their accomplishments towards their desired outcomes. Ideally, PM progress in degree from the least one would expect to see the BP do in the early stage of the project, to what it would like to see them doing during the project, to what it would love to see them accomplish, given that the project is profoundly successful.
6.	Strategy Maps (SMs)	Strategy Maps, set out in a matrix, are the tasks, activities, and approaches representing the highest prospective for success to achieve the OC.
7.	Organizational Practices (OPs)	Organizational Practices are the habits that the project will apply to be efficient, perform well and withstand change interventions over time.
8.	Monitoring Priorities (MPs)	Monitoring Priorities refers to developing a framework to monitor the progress of the project by prioritizing the type of record-keeping (journals) suitable and necessary for the project.
9.	Outcome Journals (OJs)	Outcome journals are used to collect data on BP's achievement of progress markers such as any events related (in)directly to the PM.
10.	Strategy Journal (SJ)	Strategy Journal is used to collect data on project's actions taken in terms of the strategy matrix in support of the BP taken as well as the results of such actions.
11.	Performance Journal (PJ)	Performance Journal is used to collect data on the Organizational Practices being executed by the project to

		remain relevant, innovative, sustainable, and connected to its environment through minutes of the meetings regarding progress with the OP.
12.	Evaluation Plan (EP)	Evaluation Plan is a tool for determining the performance goals and creating an evaluation plan for the project.

Despite the benefits and opportunities generated through OM because of its shared objectives and accountability of all stakeholders, there are a few concerns for its application in development projects that could hinder its effectiveness. OM is a highly participatory method, and it requires to be comprehensible and unequivocal for all stakeholders (including local people). There is the risk that the core concepts of OM might be misinterpreted and miscommunicated where the process is being explained by the facilitator of a second language (Hawkey *et al*., 2007; Sheriff and Schuetz, 2010). However, the official website of OMLC shows that OM has recently been made available in multiple languages. With the use of new ambiguous concept/terminologies such as 'behavioural change', OM methodology tends to appear to be complicated and time-consuming to allow stakeholders to adapt it with respect to their project (Sheriff and Schuetz, 2010). Therefore, delivering the three stages and twelve steps of the OM process to a project in a three-day workshop might not be effective. Having said that, in some cases OM might be intuitive and easily relate to the existing way of people's working; and in other, OM might encourage a paradigm shift in people's thinking about social change and their role in it. Nevertheless, working through the concepts and terminologies will bring meaning to the words, and more likeliness of the concepts being applied to improve the effectiveness of an intervention (Earl *et al*., 2001).

3. METHODS

3.1. Case Study

Two billion people in the world suffer from either severe or moderate food insecurity (FAO *et al*., 2019). A recent trend of gradual increase of severe food insecurity in the world has been

confirmed, Africa being the region bearing the highest ubiquity of undernourishment at approximately 20% (Sibhatu and Qaim, 2017). Given the fact that Africa is the largest recipient of food aid in the world (Sibhatu and Qaim, 2017) and a significant portion of the African population are dependent on agriculture for their livelihoods (Fraval *et al*., 2019), it is justifiable that food security needs to be addressed by emphasizing on agricultural developments. According to the International Fund for Agricultural Development and the United Nations Environment Programme (Sibhatu and Qaim, 2017), smallholder farmers produce more than 80% of the foods consumed in sub-Saharan Africa (SSA) and yet, they are at the utmost risk of food insecurity and poverty (Fraval *et al*., 2019). Therefore, to improve food and nutrition security, agricultural interventions that benefit smallholder farmers are essential (Fraval *et al*., 2019). The main objective of the RFS programme is to respond to the chronic food insecurity in sub-Saharan Africa. It targets in fostering sustainability and resilience among smallholder farmers in 12 African countries, including Uganda and Nigeria (Pagella and Mollee, 2019).

The objectives of the RFS project in Uganda and Nigeria, based on the Uganda and Nigeria Factsheet 2016 (see Appendix 4) are presented in Table 3 below:

Table 3: The objectives of the RFS project in Uganda and Nigeria

Uganda	Nigeria
To contribute to enhancing long-term environmental sustainability and resilience of food production systems in the Karamoja sub-region. The goal of the project is to improve food security by addressing the environmental drivers of food insecurity and their root causes in Karamoja sub-region.	To foster sustainability and resilience for food security in northern Nigeria through addressing key environmental and social-economic drivers of food insecurity across three agro-ecological zones: - guinea-savanna of the North-central region, - Sudan-Sahel Savanna of North-Western region, and

	- Sudan Savanna of the Northern-East region.

Karamoja subregion, also known as Uganda's cattle corridor (Akwango *et al*., 2017), is the most food-insecure region of Uganda (FAO *et al*., 2015) with half of the population suffering from food insecurity (World Food Programme, 2017) in contrast to the national average of 26% (FAO *et al*., 2015) and recording the worst humanitarian index and development indicators in Uganda (OCHA, 2009). The population growth rate of Uganda in 2020 is 3.4%, making Uganda the country with the third-highest growth rate in the world, after Niger and Equatorial Guinea (World Population Prospects, 2019). More than 30% of the population is suffering from chronic food insecurity in Uganda (USAID, 2018). According to Kamara and Renzaho (2014), almost 75% of the population in Uganda rely on agriculture, nevertheless, agricultural investments in the country have not caught up with the increasing demand for food from its fast-growing population. As can be seen, 89% of the Ugandan farmers are smallholder farmers with an average farm size of 0.97 ha, and they produce 80% of total annual agricultural yield (FAO, 2018).

Nigeria, the most populous country in Africa (World Food Programme 2020), has an annual population growth rate of 2.6% (World Population Prospects 2019). More than 80 of Nigerian farmers are smallholder farmers and they produce 98% of the food (except wheat) consumed in Nigeria (Sabo *et al*., 2017). Around 35 million people are threatened by desertification and land degradation in the project area, with more than 50% of the people food insecure (Project Implementation Report Nigeria) (GEF and UNDP, 2019a). According to the Cadre Harmonisé (CH) analysis, 3.6 million people are estimated to be facing food insecurity crisis in north-eastern Nigeria and needed emergency food assistance between June and August 2020 due to the ongoing conflict between Boko Haram and the Islamic State of Iraq and Syria-West Africa that caused 1.8 million Nigerian to be displaced (Cadre Harmonisé Analysis, 2018). Nevertheless, Nigeria is capable of building resilient food system given that their smallholder farmers are empowered through capacity building and are involved in development strategies (Sabo *et al*.,

2017). Its expected outcomes for Uganda and Nigeria are stated as follows in Table 4 (Uganda and Nigeria Fact Sheet 2016) (GEF and IFAD, 2016a, 2016b):

Table 4: Expected Impacts on Uganda and Nigeria at the end of the RFS project

Uganda	Nigeria
i. 25% reduction in the number of households suffering from moderate or severe hunger, among which 35% are female-headed households. ii. 20% increase in productivity of maize, sorghum, cassava and sweet potato, vegetables, and beans in the project area. iii. 15% increase in cattle and small stock productivity (milk, meat, eggs) by the end of the project. iv. At least 1 multi-stakeholder platform per district, supporting INRM, with at least 30% are women, 30% are men, 20% are youth, and 10% are indigenous people, by the end of the project.	i. Enhancing the institutional and policy environment for achieving improved food security. ii. Scaling up sustainable agricultural practices and market opportunities for smallholder farmers in the target agro-ecological zones to increase food security under increasing climate risks. iii. Knowledge, Monitoring and Assessment.

One of the three key components of RFS is the use of monitoring and assessment as a tool to inform scaling-up and policy change (Pagella and Mollee, 2019). Based on Uganda and Nigeria, this study developed a specific OM framework and designed a way of monitoring and evaluating the progress of RFS projects in all 12 RFS countries in SSA. By using OM as a research method, this project recorded the desired behavioural change of identified boundary partners that are required to achieve food security in Uganda and Nigeria.

3.2. Study Design

Outcome Mapping was first introduced to the RFS Hub and partner countries in a preliminary OM Workshop held at Bolgatanga in Ghana in 2019 (GEF and UNDP, 2019b; Pagella and Mollee, 2019). Later in 2020, the OM Workshop was offered to all RFS countries. This study chose two anglophone countries (Uganda and Nigeria) that showed interest in receiving the training. The initial plan for the study included two-month fieldwork in the study area as a part of the data collection. However, due to travel restrictions imposed by countries all over the world, health risks and other uncertainties brought by the Covid-19 global pandemic, the intended field-based thesis was converted into a desk-based thesis. Hence, the data collection for this study was completely online. The OM workshop was delivered via Zoom unlike initially planned face-to-face live sessions.

For the training, the facilitation guide provided in the Outcome Mapping Facilitation Guide (Earl *et al*., 2001) was followed which presented the tools and methods designed for a three-day workshop. The OM framework and OM materials for this study was designed together by an ICRAF researcher and an ICRAF fellow. Due to lack of time and resources for a three-day online training, only a two-day workshop was organized in both Uganda and Nigeria. As a result, only the delivery of training on the OM Intentional Design stage was organized. Keeping in mind short duration allocated for the workshop and it being one of the first OM Workshops, it was decided to train the participants only on some of OM's components i.e., the first phase of OM - The Intentional Design Phase that included the first 7 steps of OM. In this way, participants would not be overwhelmed by too much information at once.

3.3. Data Collection

3.3.1. Primary Data

Primary data was collected through a two-day Outcome Mapping methodology training to country participants. Observational method of data collection was also used during the online workshop. Two online workshop sessions, one per day, were carried out via Zoom from 9 am to 5 pm (local time) in both countries. The first workshop session provided the training on the first 4 steps of the Intentional Design phase of OM – Vision, Mission, Boundary Partners and Outcome

Challenges. The second workshop session covered the remaining 3 steps of the Intentional Design phase – Progress Markers, Strategy Maps and Organizational Practices as well as a brief introduction of two other phases of OM – Outcome and Performance Monitoring, and Evaluation Planning.

A list of participants and their roles in the RFS project was shared from both the countries prior to the workshop. The participants from Uganda and Nigeria, involved in online training, were all RFS project staff working at various levels and in various organizations in their respective countries. For example, the participants of Uganda represented Ministry of Agriculture, Animal Industry and Fisheries (MAIIF), Africa Innovations Institute (AFRII), Ministry of Water and Environment (MWE), Food and Agriculture Organization (FAO), Uganda Bureau of Statistics (UBOS), United Nations Development Programme (UNDP), and Moroto District while the participants of Nigeria represented the national level, each of the 7 states (Adamawa, Benue, Gombe, Jigawa, Kano, Katsina, and Nasarawa) as well as an NGO (Women Farmers Advancement Network – WOFAN).

Before the workshop started, the participants were sent the first OM Worksheet that would guide them through the first workshop. They were requested to fill in the worksheet to the best of their knowledge already and to return a version before the workshop. Their input could then inform the OM facilitators the aspects that deserved more attention and help the facilitators in creating a successful workshop. The information would feed into the OM presentation slides to some extent (as some of the examples). Going through the document would also prepare the participants well for the workshop. Similarly, at the end of each session, the participants were again sent the OM Worksheets to fill in, to the best of their knowledge gained through the workshop sessions. The presentation slides used to deliver the training were also forwarded to the participants so that they could refer to it while filling in the worksheets. A video recording of the full session was also made available to the participants. These final worksheet responses were then later used for data analysis and preparation of the final OM Intentional Design Worksheets.

The OM workshop materials, the presentation slides and the response worksheets were prepared following the Outcome Mapping Facilitation Guide developed by IDRC (Earl *et al*.,

2001). The key activities performed by the participants during the workshop are summarized in Table 5 below:

Table 5: OM workshop activities explained

S.N.	Activities	Brief Description
1.	Historical Scanning	The participants reviewed the programme's history and identified the events and issues that have influenced its development to date. This activity aimed to help them have a good overview of how their team views the various activities, goals, and milestones over the past 3 years since the RFS project started.
2.	Formulating vision and mission statement	The participants reflected on the large-scale economic, political, social, and environmental development changes that the project aims to bring about and produced a vision statement. Similarly, they also created a mission statement explaining how the RFS project plans to achieve the vision.
3.	Identifying Boundary Partners	The participants listed the project stakeholders in terms of who is important, who can influence change, and with whom the RFS project has the opportunity to work with and/or influence.
4.	Developing Outcome Challenges	For each boundary partners identified, they developed statements of desired behaviour change in order to achieve the project's full potential.
5.	Developing Progress Markers and Strategy Maps	For each boundary partners listed, they identified a set of progress markers reflecting on their respective outcome challenges and indicating what kind of behavioural changes they would expect, like, and love to see in the boundary partners change. They further developed a strategic map with strategies

		to be used by the RFS project to contribute to the achievement of the outcome challenges.
6.	Listing Organizational Practices	The participants listed 8 organizational practices reviewing the outcome challenges that will help the project fulfil its mission efficiently and support the project to sustain change interventions over time.
7.	Feedback session	After analysing the data received, a feedback session was conducted in both countries. The OM framework created, and the Boundary Partners mapped were presented and validated during the feedback session. The conclusions from the feedback session were then fed into results and discussion in this article.

Identifying boundary partners was a key process in this OM training which allowed participants to recognise a wide range of stakeholders that required attention and investment of resources. The mapping of boundary partners was particularly relevant for understanding the various functions of local/national government bodies as well as identifying key international agencies and donors. As a guideline, they were provided with nine categories of BP (see Table 6).

Table 6: Sets of potential Boundary Partners (Guideline)

Boundary Partners	
A	National Policy and decision-makers
B	Regional Policy and decision-makers
C	Local Governance Organizations (e.g. decision making at province/state or district level or village chiefs.)
D	Smallholder farmers
E	Non-Government Organizations
F	Universities and other research institutes
G	Private sector

H	International institutions
I	Other

3.3.2 Secondary Data

Annual reports and other project documents such as Project Implementation Review (PIR) and RFS factsheets provided by the ICRAF project staffs, and official website of RFS were used as secondary sources of data in the study areas.

3.4. Data Analysis

The data was cleaned and processed using the computer software package – MS Excel and analysed qualitatively. The individual MS Word worksheet responses received from the participants were first transferred to an MS Excel worksheet, the data was later cleaned, and was analysed and summarised to create a single (final) OM Worksheet to report it back to the participants of both Uganda and Nigeria. A participant analysis was also carried out for both countries using the OM workshop recordings and the observational data collected during the workshop. The final worksheet prepared was then scrutinised for each step of the OM Intentional design phase and was inspected if the boxes were filled appropriately following the OM guidelines provided to the participants through online training and OM documents.

3.5. Feedback session

Once the responses were received and the data was analysed, a feedback session for both countries was organized. Critical questions raised during the process of data cleaning, creating the final worksheet, and analysing the data were asked during the feedback session. Most importantly, the boundary partners mapped, and the OM final worksheet created were presented and validated during the feedback session.

3.6. Study Output

The information gathered during this study was used to write this MSc dissertation primarily, however, it was also used to contribute to a project report and research paper informing Uganda, Nigeria, and other Resilient Food Systems countries about the project scaling and policy

influencing using Outcome Mapping (OM) as a Monitoring and Evaluation (M&E) tool. This study contributes to the overall RFS food security and sustainability goals in SSA as well as one of ICRAF's objective to address Sustainable Development Goals (SDG) 2 that aims to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture.

4. RESULTS

4.1. Participant Analysis

Twenty-two participants were listed in the proposed participants' list sent by UNDP Program Officer for Uganda, out of which 14 and 10 participants, representing MAIIF, AFRII, MWE, FAO, UBOS, UNDP, and Moroto District were present on the first and second workshop session respectively, although some participants kept on leaving and re-joining the workshop throughout the duration because of connection issues resulted by heavy rainfall in their area.

Unlike Uganda, the number of proposed participants from Nigeria by the national project coordinator was quite high i.e., 53 because participants were representing national level, all 7 states as well as an NGO (WOFAN). However, only 20+ participants were present at the workshop on both days of training and they kept on leaving and re-joining the workshop throughout the duration.

Since the majority of the participants in Uganda were engaging in the discussion, most the boxes (from the OM worksheets) in the presentation slides were collaboratively filled during the workshop itself. The workshop was mostly two-way communication and learning. The vision and mission statements were formulated jointly, and the significant boundary partners and the outcome challenges were identified together. They discussed the progress markers and strategy maps for some of the BPs and listed the organizational practices together. The updated presentation slides, together with the worksheets, were then sent to the participants at the end of each session so that they could refer to it while filling the worksheets individually. On the contrary, since only a few participants were engaging in the discussion, the workshop in Nigeria was predominantly one-way presentation. The participants in Nigeria instead worked in groups representing the national level, each of the seven states, one NGO (WOFAN) and presented

respective vision and mission statements, identified some BPs and their OCs. One response representing each level i.e., national, each of the seven states and the NGO was later received based on these group exercises they performed. The worksheet response rate from the participants of Nigeria was impressive with all the participants sending individual worksheets before the workshop and completed final worksheet responses after the workshop. This could have been the result of the active involvement of the national project coordinator in the training, who was constantly reminding the participants to complete the worksheet responses on time. However, in the case of Uganda, compared to the online engagement level, the worksheet response rate was very low. Only a couple of worksheets were received after the workshop was completed, despite the regular reminder to submit the completed worksheets. This could be because almost all the OM steps (except for PMs and SMs for some BPs) were already filled collaboratively during the online discussion. Therefore, the majority of the participants might have felt sending individual worksheets with the same responses would be redundant.

4.2. OM Worksheets

The results obtained in the final documents of both the countries are presented below:

Step 1&2: Vision and Mission

During the training, the participants from both countries revealed that the concept and the application of vision and mission were comprehensible. The Vision Statement and the Mission Statement were formulated together by the participants (see Table 7 and 8) and, as mentioned in the feedback session, they felt that it helped them explain their ultimate goal in detail.

Table 7: The Vision Statement formulated by Uganda and Nigeria

Uganda	Nigeria
Resilient and climate-responsive ecological system and the productive landscape is restored in Karamoja sub-region that support an increase in biodiversity, agriculture production and productivity	In the three agro-ecological zones in Nigeria, the value of adoption of Sustainable Land and Water Management (SLWM) techniques and Climate-Smart Agriculture (CSA) practices is recognized by local

(crop and livestock); sustainable food security in terms of food availability, access, and nutrition at the household level, and strong long-term social systems and overall development of local communities.	communities and the government. Sustainable and resilient food production system is supported through effective implementation of agricultural policies that aim for community resilience to climate risks and other critical shocks. In the long run, food insecurity in northern Nigeria has ended, the community livelihood standard is improved, child education is increased, poverty is eradicated, and the environment is free from all hazards.

Compared to the factsheets (see Appendix 4) and Project Implementation Reviews (PIR Nigeria 2019; PIR Uganda 2019) for both countries, the vision and mission statements formulated during this study were more critical and detailed than the objectives stated in the PIR documents. One of the participants from Uganda who has been involved with RFS in Uganda since the beginning of the project shared with us that the focus of the project during the planning phase was at the ecological system, however, they seem to be changing their focus to the food systems at a later stage because, on the ground, food security was a paramount issue. Therefore, at present, attaining food security in Uganda was at the centre of RFS Uganda project. Nevertheless, all the participants agreed that a sustainable food system cannot be achieved without a healthy ecological system, they were inter-related, and one achievement leads to the other. While defining the mission statement, one of the participants from Uganda mentioned the importance of water as a part of the ecological system in Karamoja and encouraged to include Sustainable Land and Water Management (SLWM) in the statements. She also suggested biodiversity enrichment by bringing in new farming practices and importing a new variety of crops like sweet potatoes and beans.

Table 8: The Mission Statement formulated by Uganda and Nigeria

Uganda	Nigeria
In the support of the vision, the RFS project will work towards encouraging pro-active engagement of key stakeholders, self-driven community engagement and capacity building of small-holder farmers on gender-responsive technologies through scaling up SLWM, CSA, Good Agricultural Practices (GAP), and community-based biodiversity enrichment and rangeland management. The project will work towards developing sustainable value chains and support infrastructure (access to markets (inputs and outputs), organizational strengthening). It will also work to boost increased local food and nutrition security through increased diversity of foods and food sources and reduced dependency on food aid, diversified livelihoods and increased on-farm and off-farm incomes (job creation in agro-processing and improved wellbeing of the local communities) and a restored shock-responsive (resilient) landscape and agricultural production system which includes an early warning system.	In support of the vision, the RFS project will work towards capacity building of smallholder farmers and value chain actors through scaling up SLWM, CSA, and Good Agricultural Practices (GAP). The project will work together with government agencies, NGOs, and community groups to address gender disparities and lack of youth involvement in agricultural production and food value chains. It will develop effective and functional monitoring, assessment, and knowledge sharing framework to evaluate the impact of project interventions on food production systems, community resilience as well as institutional and policy coherence.

In the case of Nigeria, most of the participants had the same vision and mission including the adoption of SLWM technique, CSA practices and better agricultural policies for sustainable and

resilient food security in all seven states in Nigeria while others added the practice of Natural Resource Management (NRM), Good Agricultural Practices (GAP), capacity building of farmers and some even helped to choose suitable vocabularies for writing the statements.

Step 3: Boundary Partners (BPs)

One of the participants in Uganda highlighted the importance of regular stakeholder mapping throughout the project duration by pointing out that *'People we start with might not be the people who we end up with.'* Among the first eight sets of boundary partners, they identified all but 'International Institutions'. They identified media, elders/cultural leaders, Karachuna (youth) and politicians as 'other' boundary partners.

For RFS in Nigeria, out of the nine sets, they identified boundary partners within all categories including media, extension workers, legislator, community/traditional leaders, and financial institutions in 'other'. One of the participants representing the national level questioned if boundary partners like Security Agencies, not mentioned in the project documents, could be included through OM given the bureaucracy of finance and budgeting. Another national-level participant responded to that as he said, '*This type of new budget issue can be addressed by the steering committee during the mid-term review of the project. In fact, the present Covid-19 scenario has provided us with an opportunity to review and modify certain things, given that they are within the project framework'.*

For national-level RFS Uganda, Local Farming Communities (Smallholder farmers, women, and youth) who are also the ultimate beneficiaries, National Steering Committee, Local Government, Media, and the Implementing Partners were the most important BPs (Figure 5). Similarly, for sub-national level RFS Uganda, Local Farming Communities (Smallholder farmers, women, and youth) who are also the ultimate beneficiaries, UNDP-GEF Small Grants Team, Local Government, Media, and the NGOs/CBOs/FBOs were the most important BPs (Figure 6).

According to the OM practitioner guide, a project usually has no more than 4 or 5 BPs, but each BP can have multiple individuals, groups, and organizations. For example, "a rural development NGO may be working with five different farmer organizations in five provinces, but, if the changes

that it is trying to help bring about in those organizations are the same, then they are grouped together as a single type of boundary partner" (Earl *et al*., 2001, p. 42). Therefore, during the feedback session, the participants from both countries were asked to choose only 4 or 5 BPs (the most important ones among those identified BPs) based on suggested BPs through the figures.

As per the feedback session, in Nigeria, the most important BPs for the national level at the time were the Smallholder farmers (women and youth) who are also the ultimate beneficiaries, Federal Ministry of Agriculture, ADPs of all 7 states, Private sectors, and Media (Figure 7). For the state level, the most important BPs were Smallholder farmers (women and youth) who are also the ultimate beneficiaries, Community Leaders, Media Agencies, ADPs of fellow states and Security Agencies (Figure 8).

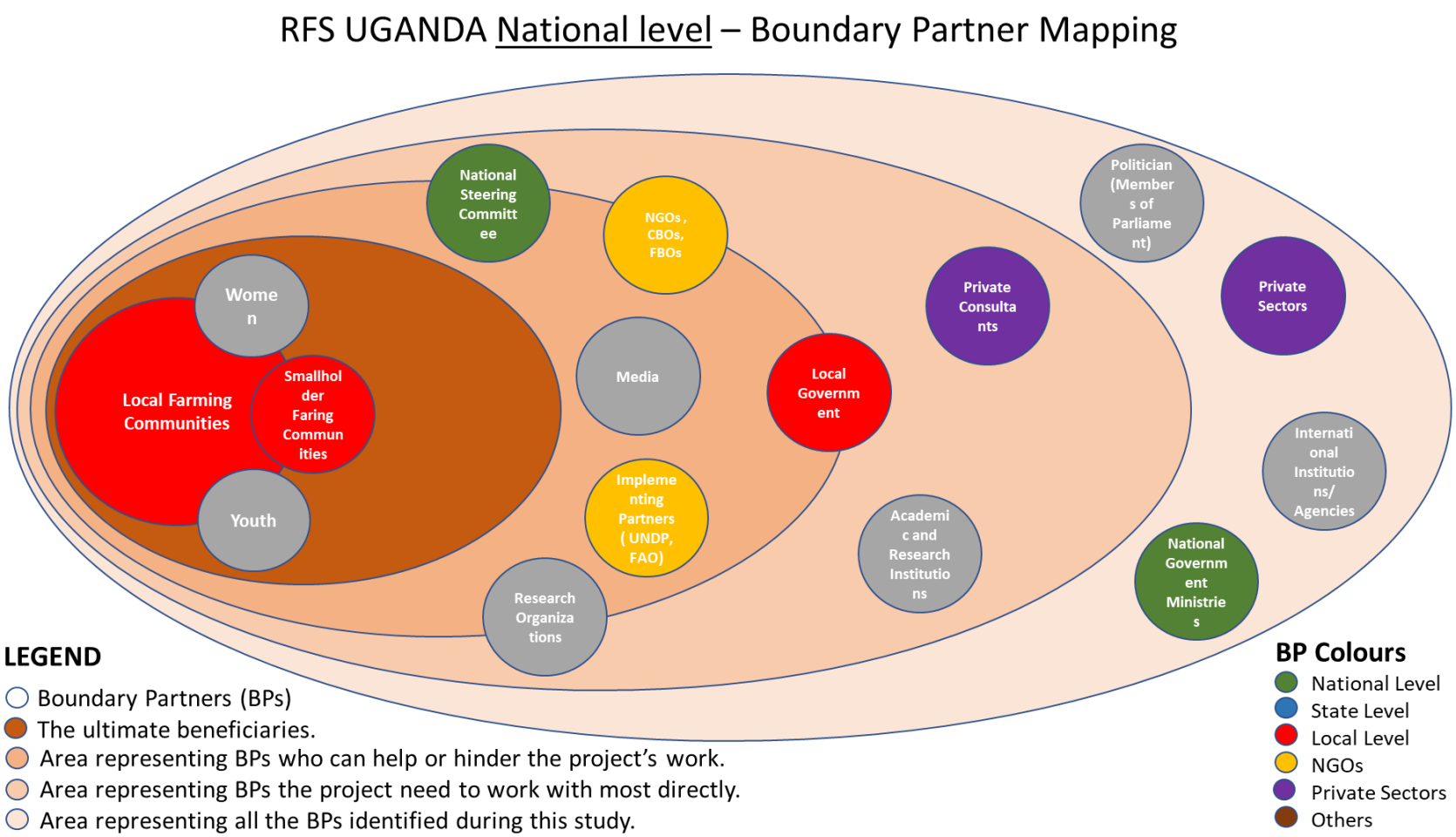

Figure 5: Boundary Partners identified by participants in Uganda for the National Level

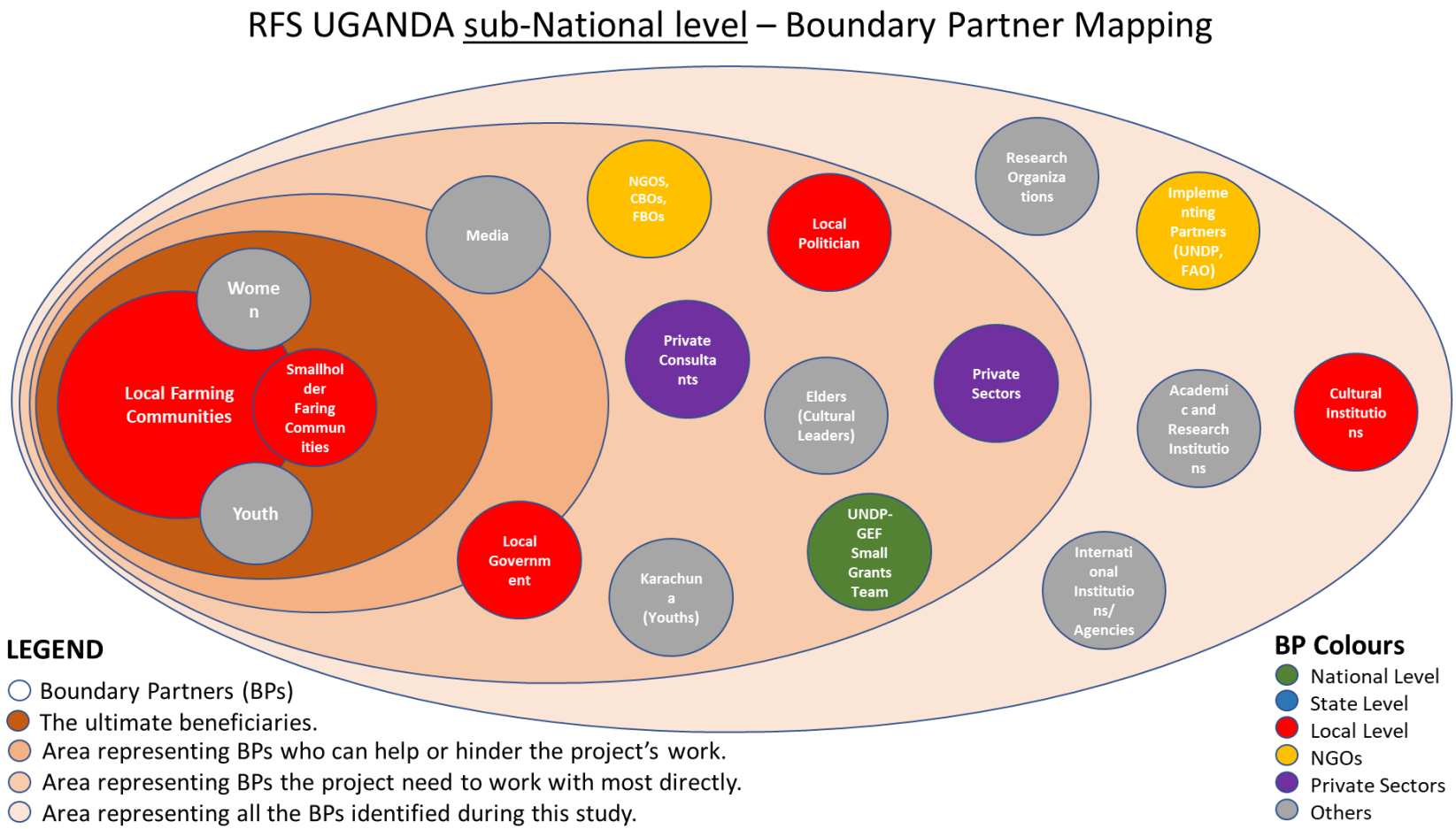

Figure 6: Boundary Partners identified by participants in Uganda for the sub-National Level

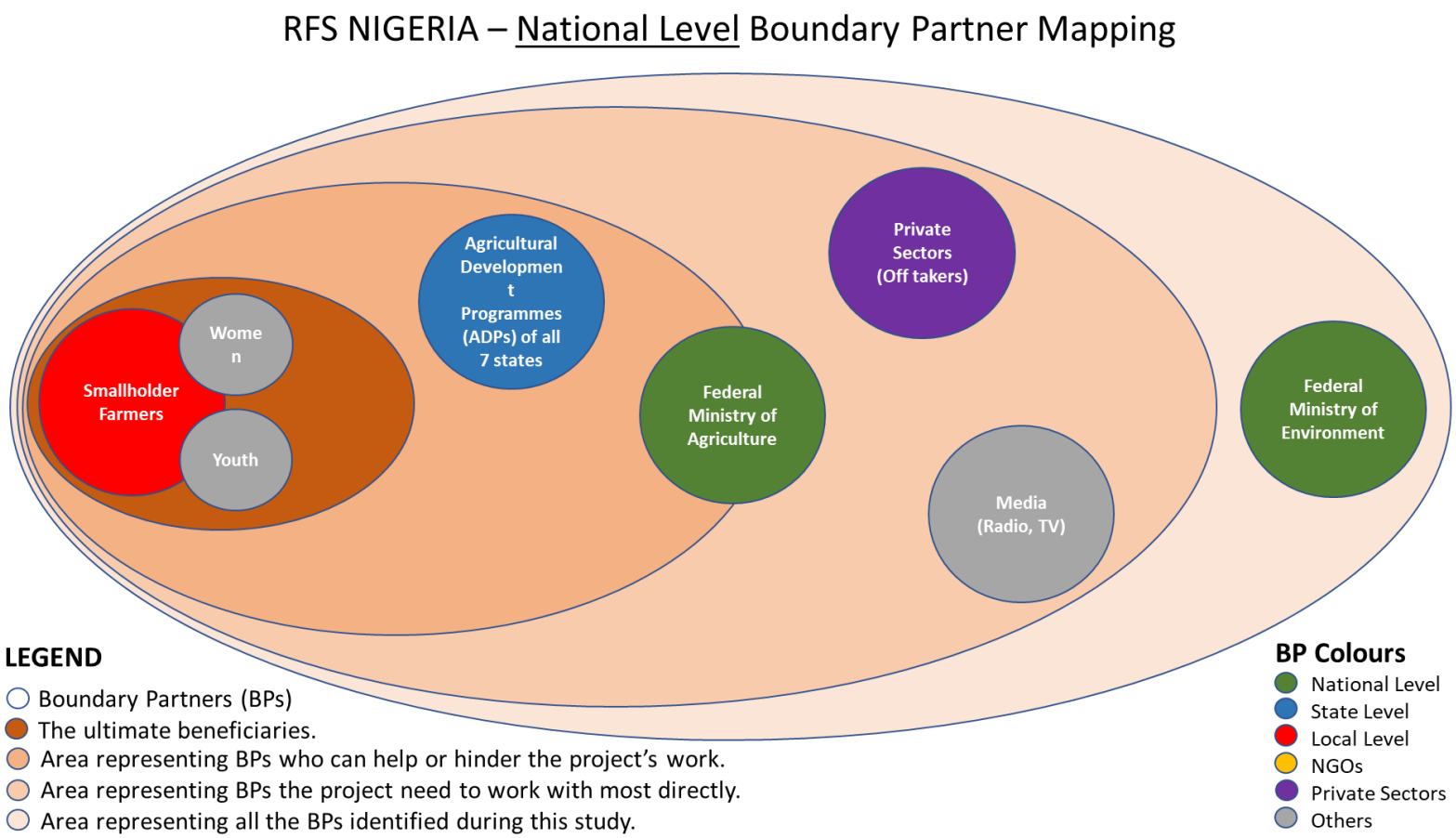

Figure 7: Boundary Partners identified by participants in Nigeria for the national level

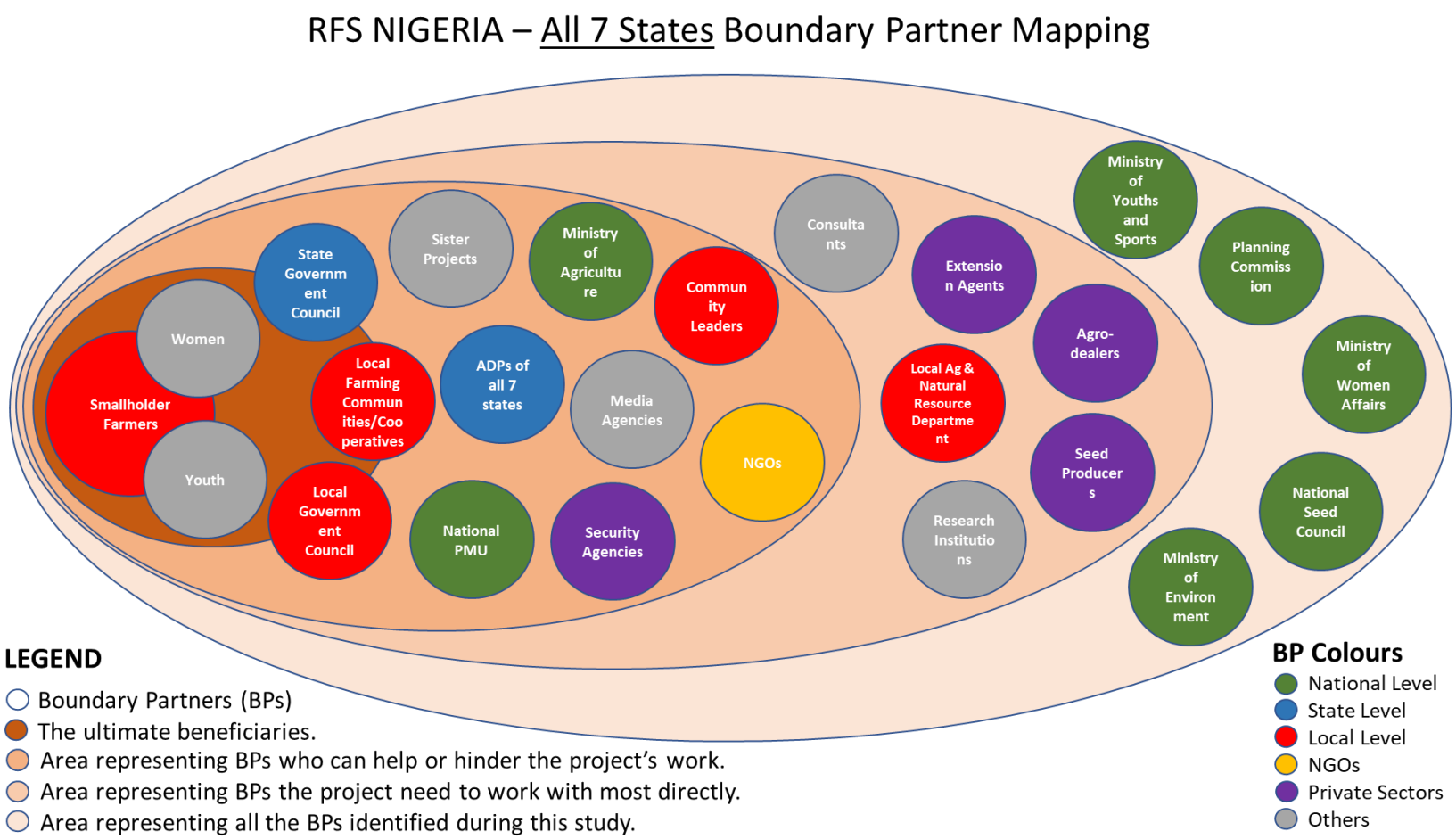

Figure 8: Boundary Partners identified by participants in Nigeria for the state level

Step 4: Outcome challenges (OCs)

The term Outcome Challenge was one of the most confusing terminologies within OM for participants from both the countries. As they mentioned, the term 'Challenge' generally implies limitation and obstacle unlike the definition of an OC provided in the OM documents which states that they are "description of the ideal changes in the behaviour, relationships, activities, and/or actions of a boundary partner" (Earl *et al*., 2001, p. 132). Among the BPs identified by team Uganda, they developed OCs for all but 2 BPs (Karachuna (youth) and politicians) within 'other'. On the contrary, team Nigeria was able to develop OCs for all the BPs identified (see Table 9).

Table 9: The Outcome Challenges developed for BP identified by Uganda and Nigeria

BP	Uganda	Nigeria
A	The RFS project intends to see National Policy and decision-makers (MDAs, Cabinet, Parliament) who take on recommendations from the implementation of the project through inclusion in policy reviews, and guidelines preparation.	The RFS project intends to see National Policy and decision-makers who formulate well-articulated, reviewed, and agreed-upon policy documents timely; implement effective policies that enable national food security and environmental development; and provide incentives packages for farmers who comply with the government policy.
B	The RFS project intends to see Regional Policy and decision-makers who implement policy consistent with the outcomes of the project implementation, for example, the restoration of the degraded landscape of Karamoja can be holistically undertaken by way of regional level ordinances for Karamoja region	The RFS project intends to see Regional Policy and decision-makers who execute the project according to the design work plan and budget provided within the 5 years' timeline; advocate co-financing and payments of counterpart funds, and enrol appropriate individuals as project beneficiaries.

	because of the outcome of the implementation of this project.	
C	The RFS project intends to see Local Governance Organizations who use evidence-based planning and support the generation of data and information to support decision making; enforce local bylaws for environment conservation and sustainable use of the natural resources; monitor food security situation and plan in good time access and availability of food at household level; have enhanced capacity to proactively engage the smallholder agro-pastoral farming communities in the planning and delivery of services that respond to their needs and provides an enabling environment to lead healthy and productive lives at all times, and has a supporting mechanism including facilitating recruitment of additional staff to sustain and undertake additional related or similar interventions to those of the programme as well as institute bylaws to facilitate and enable implementation of the activities of the programme.	The RFS project intends to see Local Governance Organizations who recognize the importance of and engage in the planning of resources management activities in partnership with other resources users in their region; can plan and articulate the vision of resource management activities and goals, and are capable of assessing and providing counterpart funds.

D	The RFS project intends to see Small-holder farmers who are proactive in ensuring food availability for the present and future anticipated crisis periods; are engaged in agricultural marketing activities (inputs and outputs); contribute to local conservation and sustainable resource use efforts; are self-driven to take on programme related activities beyond the life span of the programme including self-mobilisation to undertake community-level interventions, and are empowered with knowledge and have the capacity to make wise decisions on the protection, restoration and sustainable use of land and water resources within their catchments; are organized and have access to and consistently apply appropriate technologies to increase productivity and enjoy stable access to nutritious food and higher household incomes from diversified sources of livelihoods and ecosystem services.	The RFS project intends to see Smallholder farmers who adopt agricultural technologies to them such as SLWM and climate-smart agricultural practices; recognize the importance of and engage in the planning of resources management activities; and follow government policies and regulations.
E	The RFS project intends to see NGOs who are fully engaged in the programme through providing	The RFS project intends to see NGOs who fulfil their partnership with the project; participate more, contribute to, and provide

	additional financial or technical support to the programme using available financial resources and can mobilize and empower smallholder farming communities by enhancing their capacity to protect, restore and utilize natural resources to ensure availability of diverse ecosystem services that facilities increased production of nutritious foods at all times.	support for food security; and be involved in government policy.
F	The RFS project intends to see Universities and other research institutes who make use of the results of the programme to undertake adaptive research and share results with the programme for improvement through picking on researchable elements of the programme.	The RFS project intends to see Universities and other research institutes who deliver appropriate technical services relevant to the project implementations and fight for more support from the government for their research.
G	The RFS project intends to see the Private Sector who approach farmers for good quality products accruing from the programme support thus enhancing market linkages.	The RFS project intends to see Private Sector who comply with the Memorandum of Understanding (MOU) signed between the project beneficiaries (smallholder farmers) and the milling companies on contract farming by supplying inputs and off taking harvest as planned; invest additional fund into the rural agricultural production through other alternative livelihood activities; carry out capacity building and

		demonstration for the farmers using Demo-plots, showcasing various technologies; provide required technical support, genuine supplies and favourable pricing to the farmers; strategize the security operations (by security agencies) to safeguard smallholder farmer to allow for effective food production, and involve in government policies.
H	N/A	The RFS project intends to see International institutions who reviews their financial operation regularly and provide timely financial and technical support.
I	The RFS project intends to see Media who understand my/the messages on FS well, they report it correctly, timely and know how to reach the correct target community.	The RFS project intends to see Media who communicate updated, accurate and persuasive information to executive and legislators on the adversity of Nigerian food insecurity at the national level; advocate for incentives and encouraging packages to increase youth involvement and address gender disparity in agriculture, and create local programme contents addressing strategic objectives of the project.
	N/A	The RFS project intends to see Extension Workers who are ICT led; bridges gaps along the value chain; and is gender-sensitive towards attaining food security.

	N/A	The RFS project intends to see Legislator who enact laws that will provide an enabling environment for effective food security laws and proper environmental development regulations.
	The RFS project intends to see Elders/Cultural Leaders who support the project by mobilising their subjects promptly for any programme delivery activity.	The RFS project intends to see Community/Traditional Leaders who influence their subjects to adopt new innovative agricultural technologies such as SLWM and climate-smart agricultural practices.
	N/A	The RFS project intends to see Financial Institutions who are inclusive of all gender of smallholder farmers where the collateral is relaxed, interest is at the bottom base of one digit and paid over a 2-3 years' time frame.

Step 5: Progress Markers (PMs)

Progress Markers provided the participants with a powerful framework to understand evolving relationships between stakeholders. One of the participants believed that the analysis of unaddressed PMs in the future will show the complexity and uncertainty of stakeholder relationships and yet will provide motivation to work on them. See Table 10 & 11 for examples of PMs identified by the participants in this study.

Table 10: Progress Markers identified for one of the most important Boundary Partners of Uganda

DESIGN WORKSHEET 2D: PROGRESS MARKERS

Sources: AFRII, National Project Coordinator (FAO).	
OUTCOME CHALLENGE 4: The RFS project intends to see Small-holder farmers who are proactive in ensuring food availability for the present and future anticipated crisis periods; are engaged in agricultural marketing activities (inputs and outputs); contribute to local conservation and sustainable resource use efforts; are self-driven to take on programme related activities beyond the life span of the programme including self-mobilisation to undertake community-level interventions, and are empowered with knowledge and have the capacity to make wise decisions on the protection, restoration and sustainable use of land and water resources within their catchments; are organized and have access to and consistently apply appropriate technologies to increase productivity and enjoy stable access to nutritious food and higher household incomes from diversified sources of livelihoods and ecosystem services.	
Expect to see Small-holder farmers	
1.	Establishing home food gardens.
2.	Adopting Climate Smart Agriculture practices.
3.	Organizing themselves into common interest groups to participate in project activities.
4.	Actively participating in regular group training sessions and meetings to equip them with new skills on integrated natural resources management, climate-smart agriculture and farming as a business.
Like to see Small-holder farmers	
5.	Reviving traditional food storage systems such as community granaries.
6.	Showing interest in information and knowledge on the sustainable agriculture production system and demanding for more advisory services to be able to respond to emerging challenges through organized groups.
7.	Understanding and appreciating the need to protect and restore degraded natural resources to achieve increased food and nutrition security.
8.	Embracing and practising good farming practices including land-use planning to realize better yields in both good and bad seasons.

9.	Mobilizing and freely sharing the newly acquired knowledge with other community members as well as encouraging and supporting them to put it into practice.
10.	Developing plans and mobilizing resources to scale up/out good practices with communities within their catchment.
11.	Building strong partnerships and networks to share knowledge and identify new opportunities.
Love to see Small-holder farmers	
12.	Increasing local food share in markets and community initiatives to conserve and promote sustainable use of natural resources.
13.	Taking lead in advocating and lobbying for more support from government and other development partners to promote good agricultural and environmental management practices to ensure sustainable food and income security.
14.	Sharing knowledge and good practices with communities outside their catchment.

Table 11: Progress Markers identified for one of the most important Boundary Partners of Nigeria

DESIGN WORKSHEET 2G: PROGRESS MARKERS **Sources: National, Benue, Gombe, Kano.**	
OUTCOME CHALLENGE 9a: The RFS project intends to see Media who communicate updated, accurate and persuasive information to executive and legislators on the adversity of Nigerian food insecurity at the national level; advocate for incentives and encouraging packages to increase youth involvement and address gender disparity in agriculture, and create local programme contents addressing strategic objectives of the project.	
Expect to see Media	
1.	Communicating to decision-makers /other stakeholders on a proper understanding of complex food and nutrition security determinants and outcomes.
2.	Broadcasting analysed and interpreted evidence to decision-makers and the public to holistically confront food insecurity in the country.

3.	Welcoming project officials; accepting the vision and mission of the project, and showing readiness to participate in all activities of food security.
4.	Understanding climate-smart agriculture in its context to sustainable livelihood and sharing information to the smallholder farmers through the appropriate languages and medium.
Like to see Media	
5.	Organizing jingles and shows on the best ways to approach movement towards making Nigeria food secured by joining hand with the project to achieve the targets.
6.	Promoting food and nutrition security campaign though news, bulleting and reoccurring radio and television programme to educate the population on their responsibility to carry at their capacity.
7.	Clarifying misunderstanding and difficult issue that relate problems of food insecurity to the nation.
8.	Airing extension work as well as other programmes and disseminating true information.
9.	Carrying all the farmers and stakeholders along.
10.	Formulating programmes that will sensitize farmers on food security and advance the effect of climate change.
11.	Capable of informing the public about the principles of sustainable livelihood to achieve food security.
Love to see Media	
13.	Engaging in dialogue with executives and legislators at the national level and initiating public discourse about food insecurity in the country.
14.	Attending the regular meeting with decision-makers/relevant stakeholders and bringing forth the realities of food insecurity at grass root level which are called for concern.
15.	Establish a unit that will continuously monitor activities on food security project(s).
16.	Understanding and creating awareness on climate-smart agriculture backing it up with qualitative data.

Step 6: Strategy Maps (SMs)

As observed during the workshops, participants had some difficulties understanding the purpose of six different boxes in the matrix and the nuances between 'casual', 'persuasive', and 'supportive' strategies. Since these three strategies are overlapping, there is no distinct territory between them. They aim to make the (OM) users think about their strategies in detail. This step allowed the participants to envision contexts and design suitable approaches to reach out to the BP and influence in their behaviour change. The idea of SM allowed them to prepare, execute and demonstrate the steps towards improvement of the project. Similar to developing PMs, the participants were not able to develop SM for all the BPs identified. However, they developed it for most BPs.

Table 12: Strategy Maps identified for one of the most important Boundary Partners of Uganda

DESIGN WORKSHEET 3C: STRATEGY MAPS **Sources: AFRII, National Project Coordinator (FAO), OM Workshop.**			
OUTCOME CHALLENGE 3: The RFS project intends to see Local Governance Organisations who use evidence-based planning and support the generation of data and information to support decision making; enforce local bye-laws for environment conservation and sustainable use of the natural resources; monitor food security situation and plan in good time access and availability of food at household level; have enhanced capacity to proactively engage the smallholder agro-pastoral farming communities in the planning and delivery of services that respond to their needs and provides an enabling environment to lead healthy and productive lives at all times, and has a supporting mechanism including facilitating recruitment of additional staff to sustain and undertake additional related or similar interventions to those of the programme as well as institute bye-laws to facilitate and enable implementation of the activities of the programme.			
STRATEGY	**CAUSAL**	**PERSUASIVE**	**SUPPORTIVE**
Strategies and activities aimed at a specific individual or a group.	**I-1** • Delivering (new) seed promptly • Training on evidence-based planning, data collection,	**I-2** • Farmer to farmer extension • Training, skills, tools • Set up their demonstration • integrate evidence-based approaches in local planning	**I-3** • Establishment of farmer organisations • Establishment of community seed multiplication/breed improvement programmes

	and biodiversity and social monitoring and assessment. *What will be done to produce immediate output?*	and implementation (as an administrative policy directive) *What will be done to build capacity?*	• Watershed/landscape management associations • Enhance the capacity of the relevant department's carryout capacity needs assessment, capacity development and performance management. e.g., Program member who provides regular guidance and input, expert (management, fundraising) *How will sustained support, guidance or mentoring be provided to the boundary partner? By whom?*
Strategies and activities aimed at a specific individual's or a group's environment.	**E-1** • Agricultural services • The private sector provides quality seed • Production of awareness materials	**E-2** • Politicians – persuade agricultural officers • Ministries - develop inclusive policies and investment. • Private sector and research institutes with demonstrations	**E-3** • Increasing market accessibility • Market infrastructure development • Value Chain development

	on environment bye-laws • Conduct targeted training to equip local government staff with knowledge and skills on identified capacity development needs. e.g., Technical transfer, policy change, Internet access, terms of reference (TOR)	• Development of land use plans and setting up land-use committees • Marketing and advertising/awareness-raising Media: - Disseminate information/ messages to a broad audience - Create a persuasive environment - Change/alter message system • Prepare handbooks on the state of local biodiversity and monitoring and assessment of their decline or improvements (in local language). • Establish rewards programmes for best performers. • Establish flexible learning programmes.	• Create a farmer-based learning/action network • Boundary Partners working together and collectively supporting each other regularly • Knowledge management platforms • Establish capacity development fund, • Strengthen linkages with academic institutions e.g., Research network, a participatory research program.

Table 13: Strategy Maps identified for one of the most important Boundary Partners of Nigeria

DESIGN WORKSHEET 3G: STRATEGY MAPS **Sources: National, Benue, Gombe.**
OUTCOME CHALLENGE 7: The RFS project intends to see Private Sector who comply with the Memorandum of Understanding (MOU) signed between the project beneficiaries (smallholder farmers) and the milling companies on contract farming by supplying inputs and off taking harvest as planned; invest additional fund into the rural agricultural production through other alternative livelihood activities; carry out capacity building and demonstration for the farmers using Demo-plots, showcasing various technologies; provide required technical support, genuine supplies and favourable pricing to the farmers; strategize the security operations (by

security agencies) to safeguard smallholder farmer to allow for effective food production, and involve in government policies.			
STRATEGY	**CAUSAL**	**PERSUASIVE**	**SUPPORTIVE**
Strategies and activities aimed at a specific individual or a group.	**I-1**	**I-2**	**I-3**
	• Boost market opportunity for smallholder farmers. • Advertisements. • Construction of Agric. Centres.	• Assess the state of smallholder commodity production; • Increase the productivity of farmers as out-growers through improved access to inputs and adoption of best practices; • Link partners to identified sources of inputs and facilitate access to credit and markets. • Biding of contracts.	• Hire a consultant to carry out the activities in collaboration with ADPs. • Pay the contract agreements.
Strategies and activities aimed at a specific individual's or a group's environment.	**E-1**	**E-2**	**E-3**
		• Assess the availability of potential traders and develop concrete business ideas to involve smallholders.	• Hire a consultant to carry out the activities in collaboration with ADPs. • Build a support network, based on support and a mentor.

Step 7: Organizational Practices (OP)

In this step, the participants reviewed their outcome challenges and listed eight organizational practices (see Table 14), that would help the project contribute to the desired change in the boundary partners. Each OP signifies actions that facilitate a project to stay relevant, sustainable, and grounded.

Table 14: The Organizational Practices listed by Uganda and Nigeria

S.N.	Theme	Uganda	Nigeria
1.	Prospecting for new ideas, opportunities, and resource	The project staff actively take part in conferences, project review meetings and other events; specialises along with thematic areas; maintains strategic partnerships with BPs to pool resources through joint targeting of the same communities with complementary services and interventions, and review information available in relevant websites/publications, participating in coordination platforms, workshops, etc.	The project networks, partners and follows up with relevant stakeholders to stay updated about the progress of the project; contacts research institutes, universities and centres of excellence for study tours, experience sharing and new technologies; and disseminates innovations and latest technologies such as SLWM, climate-smart agriculture, GAP, CSA to the farmers alongside enabling environment through reformed supportive policy to make the country food secured.
2.	Seeking feedback from key informants	Project staff, partner organizations, politicians listen to key informants, elders, farmer group leaders, private sector people;	Project staff discuss/communicate/collaborate with and seek feedback from external private sectors who are experts in such fields in the

		actively seek contact with those they think should know about the project or see its impact; organise a public session on project development and accomplishments, community "Barazas", and hold bilateral discussions with opinion leaders and conducting rapid assessments.	participating communities, beneficiaries as well as non-beneficiaries, rural entrepreneurship who are working outside the scope of its activities, SPMU and extension agents, stakeholders along the value chain, and key community informants, experts and professionals to ascertain population perception, satisfaction and complaints/progress about the project.
3.	Obtaining the support of your next highest power	Project staff make regular contact to share progress, letters to a higher authority; take them on a guided tour of project activities; share periodic news briefs on the project progress, accomplishments and key challenges, and organizing high-level meetings with policymakers and implementers.	The project holds high power advocacy visits as well as state steering committee meetings with all government (e.g. Ministry of Agric. and Finance), board members, umbrella networks and stakeholders regularly to facilitate policy change decision making and project interventions in the state and also to review/update budget and work plan before implementation.
4.	Assessing and (re)designing products,	Project staff meet regularly (add time scale) to assess challenges and lessons learnt	Project staff meet as often as the need arises to assess, review, and evaluate the progress of the

	services, systems. and procedures	(what has worked and what has not); study and analyse field reports and involve academia through research students.	program; scrutinize activities from previous meetings and plan activities to complete before the next meeting.
5.	Checking up on those already served to add value	Project staff involve in joint planning and joint monitoring; encourage stakeholder engagements; monitor intended behaviour changes, conduct baseline surveys and inception meetings; ensure methods have been tested and tried before application and discuss with BP if anything is missing/needed.	The project staff conducts data verification; carry out a quarterly monitoring visit to the field for other forms of validation of the generated information; have a roundtable discussion with the boundary partners and open up to them about methodologies and goals of the project, and initiate the provision of technical assistance and quality assurance support.
6.	Sharing your best wisdom with the world	Project staff conduct live talk shows on radio and tv; organize conferences and workshop; communicate with international working groups; increase publications and RFS website.	The project conducts knowledge dissemination workshops, conferences, networking, and training to share knowledge, experience, progress, lessons learned, success stories of the project at local, national, regional, and international fora through different media agencies.
7.	Experimenting to remain innovative	Project staff pilot new ideas; engage researchers to take	Project staff meet quarterly to discuss/review progress in working

		on researchable elements; using the multidisciplinary nature of the project, and work closely with academia and other development partners.	with their partners to make deals, re-strategize and explore new opportunities and partnership with relevant bodies. They conduct annual staff assessments to ensure that adequate human resources are being allotted to programming priorities.
8.	Engaging in organizational reflection	Project staff conduct virtual meetings monthly and/or face to face quarterly, and experience capitalization through documentation.	Project staff meet quarterly/annually (as decided/required) through special conventions, project review meetings, and annual general meetings to address emerging issues, to discuss the progress in working with their partners to achieve the vision, to design organization strategic plans and to work towards organization SWOT analysis.

5. DISCUSSION

This section is developed based on observation and discussions during the workshop, feedback and inputs from the participants, and the project documents provided by the staff. It reflects on the wider usability of Outcome Mapping (OM) framework as a way of tracking (monitoring and evaluation) progress for development projects like RFS.

5.1. OM Worksheets

Two different approaches were used for data collection in the two countries. As mentioned in the results section, the collection of data in Uganda was more collaborative and most of the data were collected during the online training sessions where they discussed all the steps together and formulated most of the statements together. On the contrary, in Nigeria, worksheet responses were relied upon for data collection. This is because there was a higher number of participants in Nigeria compared to Uganda, the participants in Uganda were more interested in collaborative work rather than filling the worksheets individually and there were 20+ participants in Nigeria and it was more convenient for them to send the worksheet responses that represented their respective group i.e. the national level, one of the seven states or the NGO. In the end, both approaches provided the study with the data required in a different context in Uganda and Nigeria. The reflection on the 7 OM steps in Uganda and Nigeria is presented below:

5.1.1. Vision and Mission

As derived from the Project Implementation Report for both countries (GEF and UNDP, 2019b, 2019a), there are certain components in the indicators set out for monitoring development progress for RFS projects in both countries. For instance, in Uganda, rise in SLM and INRM supportive policies and multi-stakeholder platforms as well as the adoption of SLM and INRM practices by smallholder farmers are the key components indicating progress such as an increase in livestock and crop productivity, rise in areas of cropland/rangeland/forests, increase in water availability, and more. The vision and mission statements set out by the participants of Uganda reflects on these components and they also address the context laid out in the country factsheet (see GEF and IFAD, 2016a). Similarly, in Nigeria, the key components of indicators are management of natural resources, ecosystems services, chemicals, and waste through the practice of climate-resilient sustainable agriculture, supportive policies resulting in increased jobs and strengthened livelihoods of the smallholder farmers. These components are represented in the vision and mission statements set out by Nigeria's participants, and they also address the context set out in the country factsheet (GEF and IFAD, 2016b).

5.1.2. Boundary Partners and Outcome Challenges

Within the provided guidelines of Boundary Partners, there were several types of BPs included. For example, in case of Uganda, National Policies and decision-makers included several ministries; Smallholder farmers included local farming communities and farmer groups and associations (FFS); NGOs included Faith-based organizations; Others included media, elders/cultural leaders, karachuna (youth), politicians (Figure 5&6). In case of Nigeria, National Policies and decision-makers included ministries such as Federal Ministry of Agriculture, Federal Ministry of Environment, Federal Government; Local Governance Organizations included ADPs; Smallholder farmers included women and youth smallholder farmers; NGOs included WOFAN; Private sectors included off-takers, agro-dealers, women processors, security agencies; International Institutions included UNDP, GEF; Others included media, community/traditional leaders, legislators, extension workers (Figure 7&8). Among the stakeholders mentioned in the PIRs, the participants in Uganda did not mention 'GEF Small Grants Programme' as a boundary partner whereas the participants in Nigeria did not list 'Indigenous People' as one of the BPs. When asked during the feedback session, the participants in Uganda recognized GEF Small Grants Programme as one of the most important BPs while the participants of Nigeria established that Indigenous people are already inclusive in Smallholder farms, youth and women.

According to PIR Uganda (2019), the challenge identified so far regarding the engagement of stakeholders is '*harmonizing project operations with their activities*'. Similarly, as per PIR Nigeria (2019), '*the update on progress, challenges and outcomes related to stakeholder engagement*' states – '*all the stakeholders (7 States where the project is being implemented) have the buy-in of their respective State Governments with each state having an active Project Steering Committee (PSC) that leads the oversight functions in the respective project sites'*. Outcome Challenges in case of Outcome Mapping states the behaviour changes the project wants to see in the Boundary Partners. Looking at the BPs and their OCs in Uganda, the RFS project needs to work closely with the Local Governance Organizations, Small-holder farmers, and NGOs (see Figure 5&6). As reflected in their outcome challenges, if the LGOs and the NGOs are to work together to support the smallholder farmers by providing them with necessary financial and

technical support, capacity building, training them to adopt smart agricultural practices like SLWM, CSA, GAP, and including them in decision-making would bring great progress in the project.

Similarly, in the case of Nigeria, the RFS project needs to work tightly with National Policy and decision-makers, Local Governance Organizations, Smallholder farmers, Private sectors, and Media (see Figure 7&8) in order to progress better towards achieving its vision and mission. As manifested in their outcome challenges, the private sector plays an important role in capacity building of the smallholder farmers in sustainable agricultural practices, providing financial, technical and resource aid. Media also is a significant boundary partner in disseminating updated, accurate and persuasive information to executive and legislators on the adversity of Nigerian food insecurity at the national level, advocate for incentives and encouraging packages to increase youth involvement and address gender disparity in agriculture and create local programme contents addressing strategic objectives of the project. Therefore, RFS Nigeria needs to strengthen its relationship with private sectors, media, and smallholder farmers the most, followed by National Policy and decision-makers and LGOs.

5.1.3. Progress Markers, Strategy Maps and Organizational Practices

In this study, up to 19 PMs identified by the participants. OM practitioner guide suggests limiting the number of PMs to no more than 15 i.e., no more than 4 Expect to See, 8 Like to See, and 3 Love to See, so that quantifying the results would be easier while tracking the change process (Earl *et al*., 2001). Therefore, given that the project needs to work with 4-5 BPs, it is recommended to follow the guideline 15 PMs per one BP. While the participants from both countries confirmed during the feedback session that they understood most of the Outcome Mapping principles, some differences were noted in their OM implementation. For example, the outcome challenge and progress markers developed for Local Government Organizations in Nigeria were not completely relatable and relevant. The progress markers were more explicit including various tasks relating to LGOs such as budgeting and financing, providing counterpart funds, capacity building of smallholder farmers, adoption of new agricultural technologies and identifying beneficiaries with improved agro-inputs and markets while the outcome challenge

was poorly articulated and was vague. Similarly, even though the OC for smallholder farmers stated the importance of adopting climate-smart agriculture, sustainable land and water management and following government policies and regulations, the strategy matrix developed for smallholder farmers included no strategy relatable to the OC. This gap seen in the development of some of the OC, PM and SM could be because the participants were overwhelmed with the OM relation information provided within a two-day timeline. As observed during the workshop, participants seemed to have lost their interest and enthusiasm to learn on reaching steps 6 and 7 i.e., strategy maps and organizational practices (especially after the lunch break during the online training). It could also be because of the divided interest among the steps of OM. For example, during the workshop, participants were more engaged in discussing vision, mission, boundary partners and progress markers rather than outcome challenges, strategy maps and organizational practices. Even in the feedback worksheet, they mentioned they found Step 6 as the hardest, 'most tricky', and 'complicated'. On the contrary, they found Step 4 and Step 5 to be the most useful for the RFS project, even though they were challenging to formulate. To bring about clear link and understanding among all 7 steps of OM, this study suggests that participants could go backwards from PM to OC and/or SM to OC if they are finding it tricky to formulate OC, PM, and SM in chronological order. They could consult back and forth between the OM steps to verify their outcome challenges, progress markers and strategy maps and to establish a link between them. This implies that there could be a need to build an internal OM support system for additional capacity building for project staff and thus to provide conceptual and technical encouragement to the staff from time to time (Taye *et al* 2014). For example, when inquired how they would like the Outcome Mapping activities to be supported to enable them to capture behaviour change across their Boundary Partners, the participants in the feedback session mentioned the need of a sustainable platform in the RFS project to work with the farmers and regular support in strategizing ways to make the farmers engage with the project.

5.2. OM and Gender

Addressing gender and social inequalities in development projects play a significant role in the success of the project (Zaveri, 2017). Nevertheless, gender is only addressed implicitly in most of

the development projects methodologies because of the assumption that both men and women have fair access to opportunities and resources provided through the project and thus women are automatically benefitted from those development projects (Shams, 2009). Outcome mapping is considered to be useful in integrating gendered efforts in project planning, monitoring and evaluating (ibid). However, OM methodology in this study rarely captured the gendered perspective in the RFS project. Even though development progress indicators such as gender-sensitive and inclusive multi-stakeholder platforms, gender-sensitive integrated sustainable land and water management and climate-smart agricultural practices, and gender-dis-aggregated data on resilience and global environmental benefits of sustainable agriculture for food security managed by both men and women, have been significantly incorporated in PIR Nigeria 2019; in the OM worksheets, the mission statement, OCs and PMs rarely reflected on them while the vision statement, SMs and OPs did not mention them at all. As observed during the workshop, although the representatives from WOFAN (Women Farmers Advancement Network) were present, there was hardly any discussion among the participants on gender-inclusive activities and strategies. Not even the Factsheets (GEF and IFAD, 2016a, 2016b) comprise gender-inclusiveness in the RFS project.

PIR Uganda (2019) does not encompass gender-inclusive progress indicators, nevertheless, the 'assessment of progress in advancing gender equality' (included in PIR Uganda 2019) shows that some project activities are contributing to closing gender gaps in access to and control over resources, improving the participation and decision-making of women in natural resource governance, and targeting socio-economic benefits and services for women. For example, the selection and registration of beneficiaries for the income-generating activities ensure that 50% are women and 50% are men (PIR Uganda 2019). During the discussion in the workshop, some of the participants (including a gender expert) did talk about the importance of gender lens perspective in OM. However, participants believed that '*gender lens perspective could be reflected in the project work plan and in the logical framework but not specifically in the mission and vision statements*'. As per the OM worksheet, the participants in Uganda mentioned about

'gender' once in the mission statement and once in one of the PMs. The rest of the OM framework (vision statement, OCs, PMs, SMs, and OPs) lacked gender perspective in RFS project.

Gendered perspective can be integrated with every step of OM (Shams, 2009; Zaveri, 2017). According to Sana Sham's article on 'Gendered Outcome Mapping Framework', there is a special kind of OM methodology named as 'Gendered Outcome Mapping (OMg)' that incorporates gender analysis at the beginning of the project development thereby adding gendered perspective into all project stages including design, implementation, monitoring and evaluation. Gender analysis at the start of the project will make sure that the needs of both men and women are addressed by the project. Figure 9 provides the visualization of OMg integrated into the OM Intentional Design phase.

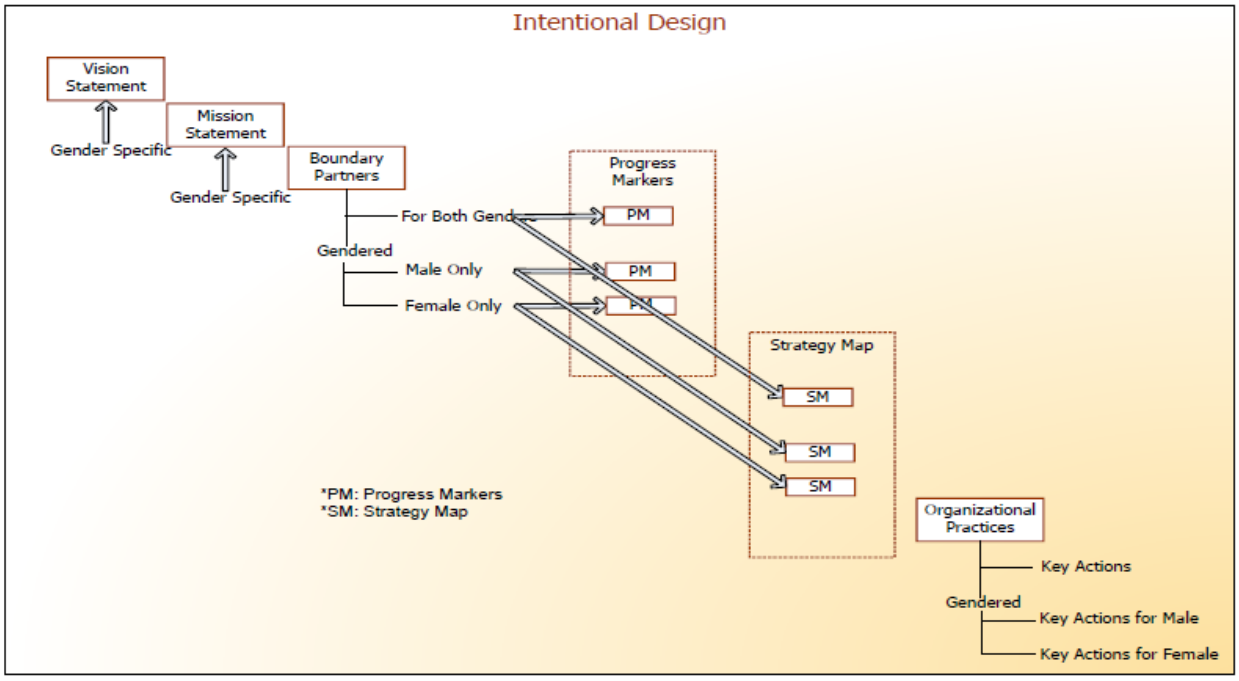

Figure 9: Gendered Outcome Mapping (OMg) applied to the Intentional Design Phase.

Source: Shams, S., (2009; p.4).

The vision and mission statements are often gender-neutral and as mentioned earlier it is expected that women will be benefitted by default by providing both males and females with equal opportunities and resources (Shams, 2009). To make the project responsive to gender

issues, OMg highlights the fact that the focus on gender must be evident in the vision and mission statements of the project. However, it is important to look at the vision and mission of the project through the perspective of each gender (Zaveri 2017) and both genders together (Shams, 2009).

"The choice of boundary partners itself can be gendered" (Zaveri, 2017, p. 15). Therefore, a balanced representation of women should be attempted during the choice of boundary partners. OM can empower gendered perspective with respect to women's participation and changes in their attitude, behaviour, and knowledge, by having women as a separate BP (ibid). Similarly, PMs should go beyond recording the numbers of males and females and be gender-sensitive by capturing behaviour change among men and women and while developing SMs OM framework needs to develop specific strategies to address each gender. OPs can also be converted into a set of PMs reflecting the creation of gender and equity experts (Shams, 2009; Zaveri, 2017).

5.3. OM and RFS

RFS is a five-year-long project in 12 sub-Saharan African countries including Uganda and Nigeria (GEF and UNDP, 2019b, 2019a). This study explored the potential for OM mapping in the RFS project in Karamoja subregion of Uganda and northern Nigeria. RFS in Nigeria, implemented by UNDP is a large-scale project operating on two levels – national and state (7 states). An NGO named WOFAN also plays a significant role in RFS Nigeria as it works together with all 7 states and national level to train the smallholder farmers nationwide (especially women) and boosts their capacity building. While in Uganda, the RFS project is implemented by FAO and UNDP. Although RFS-Uganda runs at a small scale on a single level, they identified the BPs at two levels (national and sub-national) which was inspired by the RFS-Nigeria approach.

When using OM in multi-country projects such as RFS, OM can be more resource-intensive than conventional M&E approaches because it requires an OM expert to train its users, skilled manpower who understand and operate all stages of OM efficiently, considerable time investment to gather and analyse the data (Dyer, 2012; Taye *et al*., 2014; Blundo-Canto *et al* 2017). Therefore, a balance between resources, investment and benefits must be carefully thought through before OM implementation (Dyer, 2012; Balls, 2018; Taye *et al*., 2014). This study particularly chose OM, among several other methodologies (see Appendix 3), because OM

methodology is efficient to monitor the gradual progress in perceptions and behaviour of the key stakeholders and what factors triggered or hindered those changes (Pasanen *et al*., 2018). OM creates an environment for learning, development, and reflection (Shatifan and Arifin 2014) within the RFS project strategic objectives. During the feedback session, participants from an implementing organization mentioned that OM facilitated learning at the organizational level and mutual understanding in the team. One of the participants mentioned that in the long run, OM methodology and the behaviour change brought by it can play a vital role in project scaling and policy influence. When asked if enough training has been given through this study to enable them to continue practising Outcome Mapping, the participants in the feedback session responded positively and strongly suggest its continuity in other RFS countries because OM proved to be a versatile planning and M&E tool as it used a participatory approach to formulate project vision, mission, progress markers and strategies to achieve those vision and mission. This enhanced transparency, engagement, and accountability within the project teams in both countries. As per the observation during the workshop and the feedback sessions, the participants learned a great deal from the OM training delivered, especially through the critical thinking they had to go through and challenges they faced during the formulation of vision, mission, and all other steps of OM.

OM is a flexible methodology (Earl *et al*., 2001) and it does not have to be complicated. Although OM methodology consists of different steps and is resource-intensive, the outcome challenge, progress markers, strategies and the OM system in itself can be made quite relatively simple (Pasanen *et al*., 2018). The vision, mission, organizational practices can be simple statements yet relatable to the project's objectives. The number of boundary partners identified could be overwhelming and thus challenging to engage with each one of them. For example, during this study, Uganda identified 10 boundary partners including 2 from 'other' and Nigeria identified 13 including 5 from 'other'. However, the ratio of BPs to OCs to PMs to SMs reduced for both the countries. Therefore, a project can choose 4-5 most important BP at a time and move forward in OM framework (Earl *et al*., 2001; Nyangaga, 2015). The strategy matrix might look complicated at a first glance because it requires three different types of strategies aimed at specific

individual/group and their environment. However, the aim of this step is not merely to ensure that there is something in all six boxes. Depending on the essence of the project, certain boxes can be left vacant and the appropriateness of the strategies relies mostly on the kind of change the project wishes to promote within its boundary partners (Earl *et al*., 2001). This limit in the number of BPs, PMs, and flexibility in SMs was reminded to the participants during the feedback session.

It is crucial to remember that not all participants and entities of large projects like RFS are able to see the importance of investing their time and money in the outcome mapping framework. For example, for academic research institutions measuring and interpreting the incremental changes of stakeholders may not seem as important as for more policy-oriented research institutions (Pasanen *et al*., 2018). However, in the case of the RFS project, participants were extremely happy with the OM training and the lessons learnt and were eager to continue exercising OM methodology in the project.

In order to assess the suitability of OM in a food security project and because it was a first attempt to deliver such resource-intensive training, it was decided to involve only the project team members (staff) from RFS implementing organizations in Uganda and Nigeria. Moreover, due to the limited time and resources, only OM Stage 1 – Intentional Design training was delivered while OM Stage 2 – Outcome and Performance Monitoring and Stage 3 – Evaluation Planning were briefly introduced to the participants from both countries. The participants were still curious about stages 2 and 3 and were interested in their use in future. Therefore, for future OM Workshops and training in fellow RFS countries, it is recommended to deliver the training on all 3 stages of OM if time and resources allow.

By the end of the workshops in both countries, this study was able to encourage and empower the participants representing various partner organizations, who usually function independently in RFS, to operate jointly and combine their efforts to achieve their common objectives more efficiently. More importantly, in future OM training in other RFS countries, they need to make sure that the participants understand that this workshop is not merely a gathering because the

funder desired it, but rather a platform to know their RFS colleagues and work together using OM methodology to achieve their shared goals (Moxham, 2013).

5.4. Limitation of the study

5.4.1. Covid-19 Effect

The initial plan for the study included two-month fieldwork in the study area as a part of the data collection. However, due to health risks, travel restrictions imposed by countries all over the world and other uncertainties brought by the Covid-19 global pandemic, there was the necessity to convert the field-based thesis into a desk-based thesis. Hence, the data collection for this study was completely online. The OM workshop was delivered via Zoom unlike initially planned live sessions. There were some administrative arrangements to be made in order to organize the virtual workshop such as getting permission from the RFS programme hub, agreement from the partner organizations, delivering the budget to the country office and scheduling suitable online timetables. As a result, it took longer than anticipated (in the proposal) to complete the data collection and thus, the whole process of data analysis and the report writing was pushed back late.

For the training, the facilitation guide provided in the OM Practitioner Guide 2001 was followed which presented the tools and methods designed for a three-day workshop. However, due to lack of time and resources, only a two-day workshop was organized in both Uganda and Nigeria. As a result, only the delivery of training on the OM Intentional Design stage was feasible. Had this workshop been conducted live in Uganda and Nigeria, this workshop would be most suitable for a group of 18 to 25 people (Earl *et al*., 2001). Since the training was online, any number of participants could be allowed in the training. This has both advantages, and disadvantages to some extent. For example, conducting the training online allowed larger diversity of people to join from their convenient location which saved them time and money for them not having to travel to a live training location. However, even though there were 20+ participants from Nigeria it was very difficult for the facilitators to distinguish the hierarchy among the participants, recognize their states, their roles and their expertise unless they engaged frequently in the discussion and take part in the conversation through the Zoom chatbox. Had this workshop been

conducted live in a classroom, it could have been easier to connect to the participants and the local environment, to recognize them and their respective roles and to encourage them all to engage in the discussion. The significant consequence of this virtual training, however, was the fact that people were unable to be present at all times during the full two-day workshop due to various reasons such as poor internet connection resulted by unfavourable weather conditions and/or other work commitments and appointments. Nevertheless, there appeared to have been a core group in each country actively engaged in the online workshop. This study suggests following the OM guideline (Earl *et al*., 2001) and including 18-25 participants in an online or a classroom workshop. However, since only 20+ participants out of 53 listed participants were actually present in the workshop in Nigeria, OM facilitators should consider the fact that the actual number of participants can be known only when they show up for the workshop.

As suggested also by one of the participants in Nigeria, representing the NGO (WOFAN), forthcoming RFS meetings should include cognitive strategies to overcome uncertain events like COVID-19 because this global pandemic had not only affected the setup for this RFS OM training but also the on the ground RFS workers and staff in the field. As mentioned by the participants, *"There are no free interactions. Fear is always there no matter how much/many protection kits you apply". "It has affected private sector engagement and supply of inputs to farmers was not done because of movement restrictions".*

5.4.2. OM and its Jargon

The OM terminologies were frequently explained during the workshop, the participants were encouraged to participate in online team-discussion (during the session) to talk about the OM steps in relation to the RFS project and OM training documents, presentation slides, as well as the workshop recordings, were provided to the participant in case they wanted to refer to them. Nevertheless, some terminologies such as 'boundary partners', 'progress markers', 'organizational practices' 'outcome', 'ultimate' beneficiaries compared to 'direct/indirect' beneficiaries which were confusing to many participants. Several studies have made some changes in OM terminologies such as Outcome Challenge to Outcome Statement (Moxham, 2013) and some of them did not use the term Boundary Partners and instead used Stakeholder

Mapping (Balls, 2018), Stakeholder Engagement (Balls and Nurova, 2020), Stakeholder Analysis (Moxham, 2013), to not overwhelm the participants with numerous new terms and processes. For future OM training in fellow RFS countries, it is suggested to have a discussion with a couple of key people prior to the workshop in order to learn if there is a need to find common terms to replace some OM terminologies.

5.4.3. Technical Issue

The internet connection was poor for most of the participants of both the countries because of the remoteness of the study area and/or due to the rainfall. Due to the nature of the training (online), participants could drop in and drop out at any time. This made it harder to keep track of the total number of (active) participants. More importantly, they were unable to be present in the whole training sessions and might have missed some parts of the training. To overcome this, video and audio recordings of the whole workshop were made available to the participants. In case of Nigeria, it seemed that the participants were new to using Zoom as they were unfamiliar with its functions such as muting/unmuting, communicating through the zoom chat box and the signs (yes/no/agree/disagree). As informed by the national project manager, OM online workshop was only their second Zoom meeting. This caused certain delays during the delivery of the training. Nevertheless, once they were used to it, the training went on smoothly. On the contrary, the participants in Uganda seemed very familiar with using zoom and were using the functions very efficiently.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1. Conclusions

This study concludes that Outcome Mapping (OM) methodology can be implemented to track behavioural changes in Boundary Partners involved in RFS projects. Despite fewer than expected (proposed) participants were present in the workshops, they expressed keen interest in OM tools and training. The overall feedback was positive, however, due to the practical issues such as internet connectivity, fatigue aroused from a long desk-stay, participants desired face-to-face training in future. In both countries, tracking behaviour change was a new concept. This training

motivated the project teams and aroused interest and willingness to adopt and apply OM to tract behaviour change of the boundary partners.

Certain structural differences were identified between the RFS project in the two countries. RFS in Nigeria is a large-scale project implemented by the UNDP and is running at two levels: the national level and the state level while RFS in Uganda is a small-scale project implemented by FAO and UNDP at a single level. Therefore, it is necessary to customize and adapt OM methodology to the country's unique contexts and phases of RFS projects in order to integrate tracking of behavioural change into the project monitoring and evaluation plan. To safeguard the interests of both men and women through the project, gendered perspective needs to be integrated in every OM step possible.

6.2. Recommendations

1. To incorporate tracking of behavioural change into the project monitoring and evaluation plan, it is important to configure and adjust OM methodology to the country's specific contexts and phases of RFS projects.
2. It is recommended to the RFS Project Hub that they communicate with the country project staff on a regular basis and update the RFS documents consistently. This would safeguard the revised information flow of the vision, mission, progress, and strategies of the project.
3. This study delivered training on the first – Intentional Design phase and its seven steps in the two countries. When continued in other RFS countries and in the same countries, it is suggested to deliver the training on all three phases of OM methodology including Outcome and Performance Monitoring phase and Evaluation Planning phase.
4. This study, when continued in other RFS countries, should incorporate gendered perspectives in every OM stage possible. The gender analysis would ensure that the interests of both men and women are met by the project.
1. Learning from the covid-19 scenario during this study and the changes it had brought in regard to the fieldwork, it is highly advised to have some cognitive measures and emergency fund aside for unexpected events like coronavirus global pandemic. This would make the RFS project resilient enough to operate effectively within the proposed time frame.

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APPENDICES

Appendix 1: Matrix of Usefulness Ratings

S. N.	Criteria → / Names of Tools ↓	Impact as well as outcome	Measurement (quantitative data)	Description (qualitative data)	Attribution of Change	Independent of baselines	Independent of indicators	" Proving"	" Improving"	Local Participation	Aggregation	Disaggregation	Gender disaggregation	Use by implementing staff	Use by communities	Useable with limited literacy	Transparency and feedback	Sector Coverage	**Total Score**
1.	Appreciative Inquiry (AI)	5	1	3	1	5	5	3	5	5	5	3	1	5	5	4	5	5	**66**
2.	Composite Logic Model (CLM)	5	5	5	2	3	3	5	5	4	2	1	1	5	5	3	5	5	**64**
3.	Contribution Analysis	2	2	2	5	4	3	3	3	2	3	3	1	2	1	1	3	5	**45**

4.	Critical Stories of Change (CSoC)	4	2	4	4	3	4	4	5	5	1	3	5	4	3	3	3	5	**62**
5.	Do No Harm (DNH)	5	1	5	5	2	1	1	5	1	3	5	4	5	1	1	3	4	**52**
6.	Livelihood Asset Status Tracking (LAST)	4	5	3	3	5	4	4	4	4	5	4	1	5	2	2	3	3	**61**
7.	Lot Quality Assurance Sampling (LQAS)	2	5	1	2	3	4	2	5	4	4	2	2	4	2	1	4	4	**51**
8.	'Making a Difference' Method	5	1	2	3	5	5	3	3	4	2	3	3	2	2	2	3	5	**53**
9.	Method for	4	3	5	4	5	5	3	5	5	4	4	4	5	5	4	3	5	**73**

	Impact Assessment of Programmes and Projects (MAPP)																		
10.	Monitoring of Effects (movie)	3	1	5	3	5	5	3	5	1	3	3	3	5	1	1	3	3	**53**
11.	Most Significant Change (MSC)	5	1	5	3	2	1	3	5	4	2	1	2	4	2	1	5	5	**51**
12.	NGO-IDEAs Toolbox	4	5	4	3	3	5	4	5	4	5	5	3	3	4	2	5	3	**67**
13.	Outcome Mapping (OM)	1	3	5	5	4	5	5	5	5	4	5	5	5	5	4	5	5	**76**

14.	Participatory Impact Monitoring (PIM)	4	2	3	2	4	5	2	5	5	1	3	3	5	5	1	5	3	**58**
15.	Participatory Impact Pathways Assessment (PIPA)	3	3	3	3	4	4	3	5	5	2	4	4	5	4	3	4	4	**63**
16.	Participatory Livelihood Monitoring (PaLSA)	4	2	5	5	5	2	3	5	4	5	2	2	5	5	2	3	3	**62**
17.	Peace and Conflict Impact Assessment (PCIA)	5	1	5	5	2	4	3	5	2	1	1	1	3	1	1	3	2	**45**

18.	Poverty Impact Assessment (PIA)	5	4	4	4	1	2	3	3	1	1	1	2	2	1	1	3	3	**41**
19.	'Project-Out / Context-In' Approach	5	2	4	4	4	4	4	3	4	2	3	4	1	1	1	3	5	**54**
20.	Rigorous Impact Analysis (RIA)	5	5	3	4	1	1	4	2	1	5	5	5	2	1	1	2	2	**49**
21.	Situational Analysis and Goal Establishment (SAGE)	4	5	4	4	1	5	5	5	4	5	4	3	4	4	2	3	4	**66**
22.	Social Framework	3	4	1	4	2	2	2	2	2	4	5	1	3	1	1	2	5	**44**

23.	Sustainability Impact Assessment (SIA)	5	5	3	2	2	2	5	2	1	3	3	1	1	1	1	1	4	**42**
24.	Theory of Change (ToC)	5	5	5	4	3	4	4	5	4	4	4	4	3	3	1	4	5	**67**

Appendix 2: Outcome Mapping

Short description OM is a management tool for development projects and consultancies that emphasises learning processes and changes of attitude. Outcomes are defined as changes in the behaviour, relationships, activities or actions of the people, groups, and organisations with which a project works directly.
Purpose OM focuses on outcomes (changes in behaviour, relationships, activities, actions) rather than impact (changes in state) while recognising that impact is the ultimate goal toward which projects work.
Origin Developed in 2001 by IDRC, Ottawa, with research colleagues in Asia, Africa, and Latin America.
Scope of application Sector: Applicable in any sector, especially where capacity building is an important aspect. Context: Especially suitable for structurally and thematically complex projects/programs Phase: Evaluation, planning, strategy.
Key steps involved in using it Phase of preparation: Introduction of OM by an internal or external facilitator

<table>
<tr><td colspan="2">Phase of implementation: Successive identification / definition of:
» Vision
» Mission
» Project partners
» Challenges for the project partners
» Indicators for progress
» Strategic concepts
» Management tasks to ensure success.</td></tr>
<tr><td>Advantages
» Focus on learning processes and attitude changes
» Helpful for clarification of roles of project partners
» Management instrument, especially during the planning phase
» Possibility of combining OM with other tools.</td><td>Limitations
Not suitable for
» Technical and organisational purposes
» The review of quantitative objectives
» Standardised project work.</td></tr>
<tr><td colspan="2">Conditions needed for application
» Application should start in the planning phase
» All partners must be willing to learn.</td></tr>
<tr><td colspan="2">Resource implications
Time: Workshop duration: 3 days
Stakeholders involved: Beneficiaries, project staff
Staff input: Facilitation, documentation, introduction.</td></tr>
<tr><td colspan="2">Compatibility with other tools
Focus Group Discussion, Situation Analysis.</td></tr>
<tr><td colspan="2">Sources of support
Website: Outcome Mapping online community:
http://www.outcomemapping.ca/index.php, moderated by ODI.
And see Sarah Earl et al, IDRC –</td></tr>
</table>

http://www.idrc.ca/en/ev-9330-201-1-DO_TOPIC.html

Appendix 3: Theory of Change (ToC)

Short description The tool views projects as interrelated sequences of hypotheses, "theories of change" (e.g. if right knowledge then right attitude and if right attitude then right practice). Evaluation involves asking to what extent the project's theory has unfolded or is unfolding (e.g. did participants who developed good knowledge also have positive changes in attitudes and did such attitudinal changes actually translate into better practice?) In this way, the hypotheses underlying the project are tested, and this may suggest adjustments to the overall theory of change leading to increased prospects for the project bringing about, or contributing to, desired change.
Purpose To help project stakeholders to manage for desired change.
Origin Aspen Institute.
Scope of application Sector: Multiple Context: Multiple Phase: Heavy investment of effort at planning stage; revisited periodically during implementation.
Key steps involved in using it Phase of preparation: Stakeholders define the ultimate change they want to result from the project. Through a process of "backwards mapping" they then identify changes (intermediate outcomes) that are necessary for (or, at least, will significantly aid in) bringing about that ultimate change. Indicators are defined for the outcomes, so that progress towards them can be tracked over time. Finally, interventions are devised to trigger the intermediate outcomes, and critical assumptions underlying all the linkages in the project's theory of change are articulated. Phase of implementation:

Data are collected on the outcome indicators – at the start and periodically thereafter. Phase of analysis: Data on the outcome indicators make possible periodic examination of the extent to which the project's theory has unfolded. Where changes have not occurred as expected, reasons for this can be explored. This could result in modifying the theory of change and/or in strengthening implementation.	
Advantages » Helps to focus interventions strategically, on "leverage points" for change. » Facilitates ownership of project by stakeholders. » Supports and promotes managing for change.	**Limitations** » Demands much data collection and analysis, and the requisite capability. » Comprehensive stakeholder involvement may be difficult to ensure. » It does not escape the "attribution dilemma".
Resource implications Time: Need sufficient time for developing and revising the project's theory of change and capturing and analysing data on its indicators. Stakeholders involved: Best done with involvement of key stakeholders. Staff input: Facilitation, questionnaire development, data collection and analysis.	
Sources of support Website: http://www.aspeninstitute.org/site/c.huLWJeMRKpH/b.612045/	

Appendix 4: Uganda and Nigeria Factsheet 2016

Content	UGANDA	NIGERIA
RFS Project	Fostering Sustainability and Resilience for Food Security in Karamoja	Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience in Nigeria
GEF Agency	UNDP and FAO	UNDP
GEF Grant	US $7.1M	US $7.1M
Co-financing	US $51m	US $57m

Status	Under Review	Under Council Notification
Objective	To contribute to enhancing long-term environmental sustainability and resilience of food production systems in the Karamoja sub-region. The goal of the project is to improve food security by addressing the environmental drivers of food insecurity and their root causes in Karamoja sub-region.	To foster sustainability and resilience for food security in northern Nigeria through addressing key environmental and social-economic drivers of food insecurity across three agro-ecological zones.
Context	This project seeks to respond to chronic food insecurity in the Karamoja sub-region, which is a result of combined pressures, including environmental degradation and climate change. The vast majority of people in Karamoja are facing food shortages, either yearlong or seasonal, and the sub-region has been exposed to increasing droughts.	The project will work in 70 communities, in 14 Local Government Areas of Northern Nigeria, in three main different agro-ecological zones: - guinea-savanna of the North-central region, - Sudan-Sahel Savanna of North-Western region, and - Sudan Savanna of the Northern-East region. The **Theory of Change** is based on the recognition that food security is the product of both socio-economic and environmental factors. Addressing these factors requires both coherent policies and institutions that influence the ability of farming households to foster sustainable food security and

		address critical shocks in order to enhance the resilience of food production systems. A landscape approach, integrating resilience of land use systems, natural resource management and livelihood security will be the key.
Key Components	To achieve this objective, the project will support three components: (i) establishment of stronger district and landscape-based planning frameworks that support community-based land-use planning; (ii) scaling-up of improved production technologies with a view to increase yields, diversify food production and increase incomes, while conserving natural resources; and (iii) monitoring and assessment as a tool to inform scaling-up and policy change. Cross-cutting aspects related to	The project will be delivered through three interrelated components: (i) **Component 1** will enhance the policy and institutional enabling environment for achieving improved food security, including the development of PPP for major food crop value chains (cassava, rice, and Sorghum); (ii) **Component 2** will scale up sustainable land and water management and climate-smart agricultural practices, targeting women and youth groups in particular; under this component, a support will target the better commercialization of eight

	value chains, capacity building and knowledge management will be further strengthened through direct support from the regional "Hub" project.	targeted commodities (groundnuts, maize, rice, sorghum, cowpea, yam, poultry, dairy), but also fruit trees and aquaculture. The project will build on previous experiences and partnership with the African Facility for Inclusive Markets for (AFIM), IITA and ICRISAT; (iii) **Component 3** will put in place an effective and functional monitoring, assessment, and knowledge-sharing system to evaluate the impact of project interventions on food production and household and ecosystem resilience, including global environmental benefits. The Vital Sign monitoring framework will be used
Stakeholders Engaged	The project brings together and facilitates coordination between different stakeholders, primarily through the establishment of multi-stakeholder platforms/forums at local, regional and national levels.	The lead national partner is the Federal Ministry of Agriculture and Rural Development who will chair the project steering committee. Other participating Ministries include those in charge of the Environment,

	The role of these platforms/forums is to create a space where all stakeholders can be involved in dialogue and decision making on land and water governance, land-use planning, legal frameworks, access to information (SLM and NRM options, value chains, food security and nutrition), and development planning priorities from a sustainability and resilience perspective. Key stakeholders at national level include the Ministry of Agriculture, Animal Industries and Fisheries (Zonal Agricultural Research and Development Institute); Ministry of Water and Environment; Ministry of Energy and Mineral Development; Ministry of Lands and Urban Development; Ministry of Trade, Industry and Cooperatives; Office of the Prime Minister; National Forestry Authority; National Environmental Management Agency; and the Office of Karamoja Affairs.	the Water Resources, the Women Affairs, and the Budget and Planning. State and Local governments from the seven participating States will support the implementation of the project. Local communities are the critical managers and user of agro-pastoral ecosystem resources in the project area and will be the main **beneficiaries**. In addition, CSOs, universities, and research Institutions will be engaged for advocacy, mobilization, training, research, technical inputs and knowledge sharing.

	Within the target geography, key stakeholders include the district local governments in the Karamoja sub-region, land users, their groups and leaders, NGOs and CSOs.	
Innovativeness	Bearing in mind that the project is located in a risk-averse area, the project seeks to build on proven successful practices, systems and mechanisms. The concept of a multi-stakeholder platform is a relatively innovative one in the Karamoja context. It is also expected that private sector participation in these platforms will contribute to stronger market organization and to increasing demand for sustainable production. The use of these platforms as mechanisms for land-use planning, within the current system, could also be an innovation, particularly if issues related to land rights are considered. The project will also seek to introduce technical innovations	The project has substantial opportunities for sustainability and scaling up in the context of Nigeria's current move to achieve food self-sufficiency. The project will reinforce the institutional framework but will also reinforce the local private sector. The project will be innovative by supporting new activities, including food transformation. Lastly, the project works in the three main agro-ecological areas present in the Northern Nigeria to develop a range of responses and packages tailored and specific for scaling up in the considered region.

	and to pilot SLM/NRM technologies not yet promoted in the Karamoja sub-region. This includes, for example, rainwater harvesting or rangeland rehabilitation techniques, in addition to sustainable and climate-smart land management practices in crop, grazing and forest lands. The project will also seek to promote alternative sources of livelihoods within existing value chains by using the strong agro-pastoral traditions to take communities from subsistence to (where feasible) more market-oriented practices.	
Expected Impacts	i. 25% reduction in the number of households suffering from moderate or severe hunger, among which 35% are female-headed households. ii. 20% increase in productivity of maize, sorghum, cassava and sweet potato,	**i. Enhancing the institutional and policy environment for achieving improved food security** Support to the implementation of The Green Alternative/Agriculture Promotion Policy to promote sustainable and resilient food and nutrition security.

		vegetables, and beans in the project area.	Establish national and state level multi-stakeholder gender-sensitive platforms advocating sustainable agriculture and SLWM practices for improved food security. Public-Private Partnerships established for major food crops (cassava, rice and sorghum) value chains for food production, processing and distribution.
	iii.	15% increase in cattle and small stock productivity (milk, meat, eggs) by end of the project.	
	iv.	At least 1 multi-stakeholder platform per district, supporting INRM, with at least 30% are women, 30% are men, 20% are youth, and 10% are indigenous people, by end of project.	**ii. Scaling up sustainable agricultural practices and market opportunities for smallholder farmers in the target agro-ecological zones to increase food security under increasing climate risks** 350,000 ha under improved land use and agro-ecosystem management practices. Increased value addition and access to markets realized by beneficiary smallholder farmers. 35,000 ha under intensive and diversified production for enhanced income and improved nutrition. 14,000 women and 28,000 youth incentivized to participate/engage in increased

		groundnut and rice production and processing for improved income and nutrition. **iii. Knowledge, Monitoring and Assessment** Harmonized M&E framework in place for food security information, multi-scale assessment of sustainability and resilience in production agro-ecological zones and landscapes and monitoring of global environmental benefits.
Global Environment Benefits		
Land under integrated and sustainable management (ha.)	11,000	350,000
GHG emissions avoided or reduced (CO2e)	346,302	112,000
Genetic diversity of crops and animals	N/A	15-25

maintained or increased (%)		
Land cover (increase, %)	TBD	TBD

Appendix 5: Worksheet 1

Resilient Food Systems Programme

Outcome Mapping Workshop

Workbook [*Country Name*]

Session 1: [*Date*]

Workshop organisers:

Eefke Mollee, Bangor University

Tim Pagella, Bangor University

Anusha Lamsal, Bangor University

Jonky Yawo Tenou, IFAD & Bangor University

Glossary of key terms

The definitions provided here were derived from Earl et al., 2001 unless stated otherwise.

Outcomes: Changes in the behaviour, relationships, activities, or actions of the people, groups, and organisations with whom a programme works directly. Outcomes can be logically linked to a programme's activities, although they are not necessarily directly caused by them.

Boundary Partners: Individuals, groups or organizations with which the program interacts directly and which the programme hopes to influence.

Brief

Outcome Mapping was developed by the International Development Research Centre (IDRC) for planning, monitoring and evaluating development initiatives that aim to bring about sustainable social change.

Development is about people relating to each other and their environments, the focus of Outcome Mapping is therefore on people. The originality of the methodology is its shift away from assessing the development impact of a programme (defined as changes in state — for example, number of trees planted, poverty alleviation, or increased food security) and toward changes in the behaviours, relationships, actions or activities of the people, groups, and organizations with whom a development programme works directly. Outcome Mapping does not criticise the importance of changes in state (such as increased food security or higher biodiversity) but instead argues that for each change in state there are correlating changes in behaviour.

Outcome mapping therefore explicitly and systematically identifies the desired behaviour change required to enable more transformative change as to deliver successful project impact. Supporting behaviour change in individuals, groups or organisations associated with a project requires that the programme team itself can also change and adapt and Outcome Mapping can also be used to assess and develop the adaptive capacity of the programme.

In this workshop, we will train you in how to use the Outcome Mapping (OM) framework and we will explore its potential for the assessment of high-level outcomes associated with the RESILIENT FOOD SYSTEMS PROGRAMME. This workshop, therefore, works in two ways:

1. We will train you how to apply the tool (in this programme and future programmes you might be involved in), and in addition,
2. on a project scale, we want to learn how well Outcome Mapping can contribute to the RESILIENT FOOD SYSTEMS PROGRAMME. It is therefore important we receive your outputs (workbook 1 & 2).

It is important to remember that Outcome Mapping is based on adaptive management, it acknowledges that no two cases are exactly similar, and it is from these differences that we learn together.

This document will help guide you through the process and provides worksheets for you to fill in *before*, *during* and *after* the sessions. Since reflection is an important component of the Outcome Mapping process, it takes time to consider the various steps that are part of the OM process. This is not just one straight sequential line. We encourage you to go back and add information to steps that you might not have thought about before. Since we learn together, we also want you to reflect on this process. After the workshops, we ask you to send us your final versions of this document and workbook 2.

For more information on Outcome Mapping in the RESILIENT FOOD SYSTEMS PROGRAMME, please read the report '*Outcome Mapping framework of key boundary partners of the GEF-IAP-FS programme'* which was written after the annual partner meeting in Bolgatanga, Ghana in March 2019.

Pre-session activity for participants

Please have a look at the following boxes and try to fill them in, to the best of your knowledge and return to us. It doesn't have to be perfect or finished, as you will submit a final version after the session. Providing the workshop team with this draft input before will help us make the workshop most relevant and efficient to you.

Box 1: Your information

Question	Answer	
Name		
Role		
Projects involved with (work package etc.)		
Are you familiar with Outcome Mapping already?		
• If yes, how and what has your experience been so far?		
• If no, have you done any other type of relevant behaviour change monitoring, already?		
Who do you primarily work with? (please tick box)		National Policy and decision-makers
		Regional Policy and decision-makers
		Local Governance Organisations (e.g. decision making at province/state or district level or Village Chiefs.)
		Smallholder farmers
		Non-Government Organisations
		Universities and other research institutes
		Private sector
		International institutions
		Other:

A Historical Scanning activity

In a historical scanning activity, you review the programme's history and the events and issues that have influenced its development to date. You can do this alone or together with your team. Eventually, we want to have a good overview of how your team views the various activities, goals and milestones. It is good to think about this yourself first and then discuss with your colleagues. (Please add rows as you think is needed).

Box 2: Please provide a timeline of your project's history

When/Timeline	Activity
Example: 2017 start of the project.	*Team and roles appointed*

Box 3: Reflecting on the historical scan. Look at the timeline you have just set out, answer the following questions:

Question	Answer
What are the high/low points or successes/challenges you have encountered this far?	
Where are the shifts or turning points? What kind? Why?	
How would you name the earlier/mid/later periods?	
What trends/issues do you see over the period?	

Developing a common understanding of "Evaluation"

Box 4: The concept of evaluation

Question	Answer
Everyone has preconceived ideas about evaluation — some positive, some negative. What are the first words that you come up when you hear the word Evaluation?	

Vision and Mission

Box 5: The **Vision** describes the large-scale development changes that the project hopes to encourage.

Question	Answer
In just a few sentences, what is this programme supposed to accomplish?	
What are your dreams of success? What changes do you want to try to help bring about? Imagine the context in three to five years when the programme has been very successful: what would be different?	

Box 6: The **Mission** spells out how each project will contribute to the vision and identifies the primary points of engagement.

Question	Answer
How can the programme best contribute to or support the achievement of the vision?	
Write down two or three characteristics that the programme would have if it was working ideally.	

Boundary Partners

The **Boundary Partners** (or Stakeholders) are those individuals, groups, or organisations with whom the programme interacts directly and with whom it anticipates opportunities for influence. The choice of Boundary Partner describes the programme's theory in terms of who is important, who can influence change but also with whom the programme has the opportunity to work with and/or influence. This is where the term boundary comes from, the boundary of the programme's sphere of influence.

Box 7: Selecting your Boundary Partners

Question	Answer
What individuals, organizations, or groups will the program need to work with to effect these changes?*	
Who will you work with most directly?	
Who can help or hinder your work?	
Who are the ultimate beneficiaries?	
Please state why these individuals, organizations, or groups are needed as partners.	

**Guidelines: Consider groups and individual groups from the following table*

A	National Policy and decision-makers
B	Regional Policy and decision-makers
C	Local Governance Organisations (e.g. decision making at province/state or district level or Village Chiefs.)
D	Smallholder farmers
E	Non-Government Organisations
F	Universities and other research institutes
G	Private sector
H	International institutions
I	Other

Box 8: Reflecting on your Boundary Partners. Copy the boundary partners you identified in Box 7 in the first column here and fill in the rest.

Boundary Partner	Why is a behaviour change in this partner important?	How often have you interacted with this Boundary Partner to date? *If you have not had contact yet, and only realise that this should be a boundary partner please write 0.*	Approximately, how many people have you interacted with?	Are they a 'planned', 'emergent' or 'should be' Boundary Partner? *Planned = they were a partner from the beginning* *Emergent = they came on the project once it had started* *Should be = I only realise now that they should be*	Is engagement with this group going to plan?	How is this Boundary Partner captured in your project's Mission?	If applicable (e.g. when boundary partners are farmers): How many of these are likely to be a woman?	If applicable (e.g. when boundary partners are farmers): As we move through the project cycle - How many should be a woman?

Outcome Challenges

Outcome Challenges are specific behavioural changes and actions the project would like the boundary partners to exhibit by the end of the project. They should be phrased in a way that reflects how the actors would be behaving and relating to others if the program had achieved its full potential. They should be idealistic yet realistic.

Example Outcome Challenge
Example of an Outcome Challenge if the boundary partner is 'local communities': **"The programme intends to see local communities** that recognize the importance of, and engage in, the planning of resource management activities in partnership with other resource users in their region. These communities have gained the trust of the other members of the partnership and the recognition of government officials so that they can contribute constructively to debates and decision-making processes. They can plan and articulate a vision of forest management activities and goals that is relevant to their context and needs. They call upon external technical support and expertise as appropriate. They act as champions for model forest concepts in their communities and motivate others in the partnership to continue their collaborative work."

Box 9: Please take over the list of boundary partners you identified in session 1 and outline the outcome challenges for each of them. Please phrase it: *"The [programme] intends to see [boundary partner] who [description of behaviours in the active present tense]."*

Note: Please add or remove rows as you see fit.

Boundary Partners		Outcome Challenges
1		The *[programme]* intends to see *[boundary partner]* who …...
2		The *[programme]* intends to see *[boundary partner]* who …...
3		The *[programme]* intends to see *[boundary partner]* who …...
4		The *[programme]* intends to see *[boundary partner]* who …...

5		The *[programme]* intends to see *[boundary partner]* who *…...*

Thank you for filling this in, we look forward to the workshop and your results!

Appendix 6: Worksheet 2

Resilient Food Systems Programme

Virtual Outcome Mapping Workshop

Workbook [*Country Name*]

Session 2: [*Date*]

Authors:
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Glossary of key terms

The definitions provided here were derived from Earl et al., 2001 unless stated otherwise.

Outcome Challenges: Description of the ideal changes the programme intends to influence the behaviour, relationships, activities and/or actions of a Boundary Partner.

Progress Markers: A set of graduated indicators of changed behaviours of a Boundary Partner that focus on the depth or quality of the change.

Strategy Maps: A matrix that categorizes six strategy types (causal, persuasive, and supportive), which a programme employs to influence its boundary partner. Strategies are aimed at either the boundary partner or the environment in which the boundary partner operates.

Organizational Practices: Eight separate practices by which a programme remains relevant, innovative, sustainable, and connected to its environment.

Pre-session activity for participants

Please have a look at the following boxes and try to fill them in, to the best of your knowledge and return to us. It doesn't have to be perfect or finished, as you will submit a final version after the session. Providing the workshop team with this draft input before will help us make the workshop most relevant and efficient to you.

Country project organisational unit:

Name(s) and Roles (e.g. extension office, researcher, M&E officer, district focal person etc.):

(Sub)Project(s) involved with:

Outcome Challenges

Have a reflective look at your revised box 9 and fill in box 9b. Are you happy with your Outcome Challenges or do you need to change something? If you realise something new, do go back and adjust it in workbook 1. As explained OM is a reflective and flexible methodology, that allows you to be dynamic.

Box 9b: Reflections on your Outcome Challenges.

Question	Answer
Is anything missing or factually incorrect? What is your first "gut" reaction to the information?"	
Does anything surprise you about the changes included? Is the set of changes overly ambitious or not sufficiently ambitious?	
Will the boundary partner be better able to contribute to the development process and the vision if they are behaving and relating to others in these ways?	
If all these changes occurred, would this boundary partner be well placed to contribute to the vision?	
If all these changes occur, will the programme have made the contributions to the vision that it wanted to make? Will it have fulfilled its mission?	
Have the necessary links and connections between the programme and your organization's mandate been established?	

Progress Markers

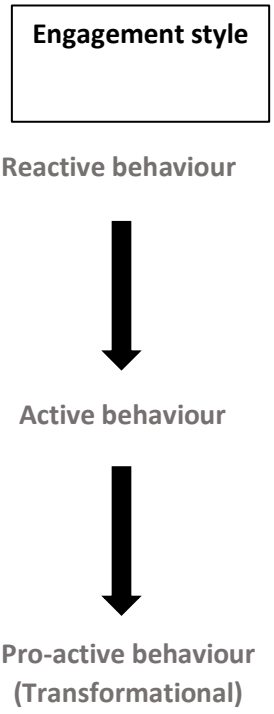
Progress markers are a set of statements describing a gradual progression of changed behaviour in the boundary partner leading to the ideal outcome challenge.

They represent the information (observable change) which can be gathered to monitor boundary partner achievements.

Success will be assessed based on their ability to encourage the greatest transformation possible in the context in which they and their boundary partners are operating, and this transformation will be situated in the context of the visionary change to which the programme is committed.

Progress Markers are the indicators that reflect what the project would

1. expect to see the boundary partner do as an **immediate response (during the project)** to the project's activities – **REACTIVE** BEHAVIOUR;
2. like to see the boundary partner do as **a short-term response (by the end of the project)** to the project's activities – **ACTIVE** BEHAVIOUR; and
3. love to see the boundary partner do as **a long-term response (immediately after the end of the project and continued)** to the project's activities – **PRO-ACTIVE/TRANSFORMATIONAL** BEHAVIOUR.



Example Progress Markers	
Boundary Partner 1: **Local Communities** Outcome Challenge 1: **The programme intends to see local communities** that recognize the importance of, and engage in, the planning of resource management activities in partnership with other resource users in their region. These communities have gained the trust of the other members of the partnership and the recognition of government officials so that they can contribute constructively to debates and decision-making processes. They can plan and articulate a vision of forest management activities and goals that is relevant to their context and needs. They call upon external technical support and expertise as appropriate. They act as champions for model forest concepts in their communities and motivate others in the partnership to continue their collaborative work.	
EXPECT TO SEE LOCAL COMMUNITIES	
1	Participating in regular model forest (MF) partnership meetings
2	Establishing a structure for cooperation in the partnership that ensures that all local interests are represented (mechanics of setting up the structure)
3	Acquiring new skills for involvement in the MF
4	Contributing the minimum human and financial resources necessary to get the MF operational

LIKE TO SEE <u>LOCAL COMMUNITIES</u>	
5	Articulating a vision for the locally relevant MF
6	Promoting the MF concept and their experiences with MFs
7	Expanding the partnership to include all the main forest users
8	Calling upon external experts when necessary to provide information or meet technical needs
9	Requesting new opportunities for training and extension
10	Producing and disseminating concrete examples of benefits arising from MF activities
11	Identifying opportunities for collaboration with other institutions and actors
12	Identifying opportunities for, and successfully obtaining, funding from a range of sources
LOVE TO SEE <u>LOCAL COMMUNITIES</u>	
13	Playing a lead role in resource management with a view to long- and medium-term benefits
14	Sharing lessons and experiences with other communities nationally and internationally to encourage other MFs
15	Influencing national policy debates and policy formulation on resource use and management

Box 10: Please provide a list of progress markers for each Outcome Challenge identified in Box 9.

Note: Please add/delete as many Boxes as required for all boundary partners (You need to fill in one for each boundary partner).

Progress Markers	
Boundary Partner 1: Outcome Challenge 1:	
EXPECT TO SEE _____ *[the boundary partner]*	
1	
2	
3	

4	
LIKE TO SEE _____ *[the boundary partner]*	
5	
6	
7	
8	
9	
10	
11	
12	
LOVE TO SEE _____ *[the boundary partner]*	
13	
14	
15	

Progress Markers	
Boundary Partner 2: Outcome Challenge 2:	
EXPECT TO SEE _____ *[the boundary partner]*	
1	
2	
3	

4	
LIKE TO SEE _____ *[the boundary partner]*	
5	
6	
7	
8	
9	
10	
11	
12	
LOVE TO SEE _____ *[the boundary partner]*	
13	
14	
15	

Progress Markers	
Boundary Partner 3: Outcome Challenge 3:	
EXPECT TO SEE _____ *[the boundary partner]*	
1	
2	
3	
4	

LIKE TO SEE _____ *[the boundary partner]*	
5	
6	
7	
8	
9	
10	
11	
12	
LOVE TO SEE _____ *[the boundary partner]*	
13	
14	
15	

Progress Markers	
Boundary Partner 4: Outcome Challenge 4:	
EXPECT TO SEE _____ *[the boundary partner]*	
1	
2	
3	
4	

LIKE TO SEE _____ *[the boundary partner]*	
5	
6	
7	
8	
9	
10	
11	
12	
LOVE TO SEE _____ *[the boundary partner]*	
13	
14	
15	

Strategy Maps

A strategy map is a matrix that identifies 6 types of strategies for each outcome challenge that can be used by the programme to contribute to the achievement of an outcome.

Strategy Map Guide			
Strategy	**Causal**	**Persuasive**	**Supportive**
Strategies and activities aimed at a specific individual or a group.	**I-1** ▪ Cause a direct effect ▪ Produce an output e.g., Deliver money, obtain research, prepare a report	**I-2** ▪ Arouse new thinking/skills ▪ Always expert-driven ▪ Single-purpose e.g., Capacity-building activities, skill enhancement, methodological workshops, training	**I-3** ▪ Build a support network ▪ Based on a supporter/mentor who guides change over time (this could be one person or a group of people) ▪ Involvement is more frequent and sustained ▪ Nurturing for self-sufficiency ▪ Multipurpose (broader intent) e.g., Programme member who provides regular guidance and input, expert (management, fundraising)
Strategies and activities aimed at a specific individual's or a group's environment.	**E-1** ▪ Change physical or policy environment ▪ Incentives, rules, Guidelines e.g., Technical transfer, the policy change, Internet access, terms of reference (TOR)	**E-2** ▪ Disseminate information/ ▪ messages to a broad audience ▪ Create a persuasive environment ▪ Change/alter message system e.g., Radio, TV, the Internet, publications, conferences, findings, workshops	**E-3** ▪ Create a learning/action network ▪ Boundary Partners working together and collectively supporting each other regularly e.g., Research network, participatory research programme

Example Strategy Map		
CAUSAL	**PERSUASIVE**	**SUPPORTIVE**
I-1	**I-2**	**I-3**
▪ Fund research projects	▪ run workshops on quantitative and qualitative methods ▪ offer Internet research courses ▪ coordinate training on participatory methods ▪ offer gender sensitivity training to those working with HIV-infected women	▪ hire a professional writer on a retainer to work on dissemination strategies with researchers ▪ hire a fundraiser to help identify donors and develop a fundraising strategy ▪ provide ongoing technical assistance
E-1	**E-2**	**E-3**
▪ provide computers and Internet access ▪ include work with women and youth as a condition for the grant	▪ organize regional conferences for HIV/AIDS research community ▪ develop an Internet site with tools and methods ▪ publish “special paper” series	▪ establish a formal mentorship programme that partners experienced and junior researchers ▪ facilitate the development of an electronic HIV/AIDS policy research network

Note: You are not required *to define actions for all 6 cells.*

Box 11.1: **Boundary Partner 1: Outcome Challenge 1**

Strategy	Causal	Persuasive	Supportive
Strategies and activities aimed at a specific individual or a group.	I-1	I-2	I-3
Strategies and activities aimed at a specific individual's or a group's environment.	E-1	E-2	E-3

Box 11.2: **Boundary Partner 2: Outcome Challenge 2**

Strategy	Causal	Persuasive	Supportive
Strategies and activities aimed at a specific individual or a group.	I-1	I-2	I-3
Strategies and activities aimed at a specific individual's or a group's environment.	E-1	E-2	E-3

Box 11.3: **Boundary Partner 3: Outcome Challenge 3**

Strategy	Causal	Persuasive	Supportive
	I-1	I-2	I-3

Strategies and activities aimed at a specific individual or a group.			
Strategies and activities aimed at a specific individual's or a group's environment.	E-1	E-2	E-3

Box 11.4: **Boundary Partner 4: Outcome Challenge 4**

Strategy	Causal	Persuasive	Supportive
Strategies and activities aimed at a specific individual or a group.	I-1	I-2	I-3
Strategies and activities aimed at a specific individual's or a group's environment.	E-1	E-2	E-3

Organizational Practices

Organizational Practices require you to review the Outcome Challenges and identify key actions that will help the project to fulfil its mission.

S.N.	Examples of Organizational Practices for a programme focusing on rural entrepreneurship	
1	Prospecting for new ideas, opportunities, and resource	The programme makes full use of the latest technology and data sources to scan the region and the world for new opportunities to launch or foster new deals.
2	Seeking feedback from key informants	Programme staff actively seek the views and opinions of experts in rural entrepreneurship who are working outside the scope of its activities.
3	Obtaining the support of your next highest power	The programme engages Board members in the design of its interventions and presents regularly to the Board its progress in identifying, initiating and closing new deals.
4	Assessing and (re)designing products, services, systems. and procedures	Programme staff meet monthly to review experiences of service delivery and systems for identifying and building new deals.
5	Checking up on those already served to add value	Programme staff initiate the provision of technical assistance and quality assurance support.
6	Sharing your best wisdom with the world	Programme staff identify conferences and workshops on rural entrepreneurship and deliver papers and seminars on the programme at least twice each year.
7	Experimenting to remain innovative	The programme affords time and space to its staff for reflection on its organizational practices and activities and promotes "outside-the-box" thinking.
8	Engaging inorganizational reflection	Programme staff meet quarterly to discuss progress in working with their partners to make deals. They conduct annual staff assessments to ensure that adequate human resources are being allotted to programming priorities.

Box 12: Please describe key actions for each of the practices below.

S.N.	Organizational Practices	Guiding Questions	Key Actions
1	Prospecting for new ideas, opportunities, and resources	*Where or how will we find out about new opportunities or resources to achieve our vision and mission?*	
2	Seeking feedback from key informants	*Who can we ask (in addition to our project beneficiaries) what our project*	

		beneficiaries think of our project?	
3	Obtaining the support of your next highest power	*How will we get support and approval from organizations' management or from government departments for what we do?*	
4	Assessing and (re)designing products, services, systems. and procedures	*What procedures will be followed to ensure that we re-evaluate our methods continuously?*	
5	Checking up on those already served to add value	*How will we determine from our boundary partners whether methods we intend to use, has been tried and found wanting?*	
6	Sharing your best wisdom with the world	*How and what will we share about what we have learnt during the project?*	
7	Experimenting to remain innovative	*What systems will we put in place to foster responsible experimentation with our limited resources?*	
8	Engaging in organizational reflection	*When will we have feedback and bonding sessions for project management team members?*	

Thank you for filling this in, we look forward to the feedback session of the workshop!