



THEORY OF CHANGE BASED PROJECT MONITORING, MEASUREMENT, LEARNING AND ADAPTATION: GUIDANCE AND METHODOLOGY

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INTRODUCTION

Document Intention, Design, and Use

WHAT IS THIS DOCUMENT?

This document presents guidance, tools and other resources to help an organization implement a Theory of Change (ToC) based project including:

- 1) Reviewing and Refining a Project ToC
- 2) Prioritizing Outcomes for Monitoring, Measuring, and Learning
- 3) Iterative Monitoring, Analysis, Reflection and Learning
- 4) Knowledge Generation and Dissemination
- 5) Adaptive Actions

WHY TOC?

Over the past few decades, the development community has become more aware that the challenges people, communities, cities, and countries face are embedded within multiple inter-dependent and dynamic environmental, social, organizational, and political systems. Affecting change in complex environments requires a systems approach – one which looks at the interrelationships between parts of a system, as much as the parts themselves. ToC is a powerful, systems approach tool for project design, implementation, monitoring, evaluation, and learning in complex environments.

WHY THIS DOCUMENT? WHY NOW?

ToC has become a central project design framework for many bi- and multi-lateral institutions and foundations, including but not limited to USAID, DFID, the Gates Foundation, Annie E Casey Foundation, and others. As ToC based project *design* has become more mainstream across the development community, there is a growing need for learning and sharing of best practices in ToC based project *management*, including Monitoring and Evaluation (M&E), to enhance outcome monitoring, measurement, learning, and adaptive actions in a ToC based project.

WHO IS THIS DOCUMENT FOR?

We developed this guidance document for all persons and development practitioners working on a ToC based project. However, it may be most useful for project staff responsible for leading the design, implementation, monitoring, analysis, evaluation, learning, and adaptive actions on a ToC based project. These staff persons are typically project managers, M&E managers and specialists or learning managers and specialists.

HOW SHOULD THIS DOCUMENT BE USED?

This guidance document is NOT a comprehensive, all-inclusive manual for designing a ToC. Instead, we developed this document to provide users with a foundational understanding of how to utilize the ToC as a *life of project approach*. ToC are often developed by a project at the proposal stage or at the beginning of project implementation. Additionally, ToC's are frequently only revisited at the end of a project, which devalues their purpose. The methodologies, tools, resources, and illustrative case studies¹

¹ Illustrative purple case study boxes are of a fictional project called the **Food Security in Jalapa** (FSJ) project. The ToC for the FSJ project (Figure 3) is derived from the [TOPS Theory of Change Facilitators Guide](#) (Starr & Fornoff, 2016).

found in this document are intended to empower project teams in conducting ToC review, revision, monitoring, analysis, and learning as a *regular* process of good project management.

DOCUMENT ROADMAP

Following the documents' **Introduction** and **Overview of ToC and a ToC Based Project** sections, the **Guidance for M&E Teams in a ToC Based Project** section is outlined in three "phases". Each phase includes foundational theory, implementation and management considerations for ToC based projects, and recommended processes, tools, and resources. Described activities and methods provide a basic framework; they can and should be tailored, through a collaborative process, to meet the needs of individual projects.

Phase 1: ToC Review and Refinement presents guidance and tools for leading a participatory, multi-stakeholder process to review and refine ToC pathways and outcomes and to identify critical ToC assumptions.

Phase 2: Iterative Monitoring, Analysis, Reflection and Learning presents a strategy for building a shared understanding of Monitoring Evaluation and Learning (MEL) in a ToC based project, prioritizing ToC outcomes for monitoring, evaluation and learning, developing a ToC Monitoring Framework, and a project learning agenda. We also provide an overview of several qualitative and quantitative data collection and analysis methods, well suited for monitoring and measuring a ToC based project.

Phase 3: Knowledge Generation, Dissemination, and Adaptation presents processes and guidance to help a project generate knowledge and promote project adaptation.

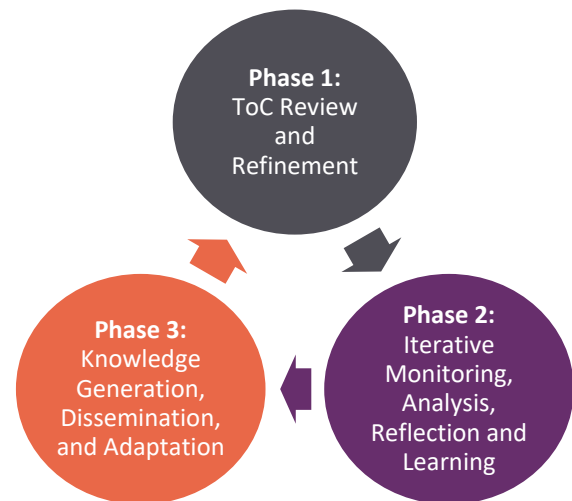


Figure 1. The 3 Phases of Our Approach to ToC Based Project Monitoring, Measurement, Learning and Adaptation

OVERVIEW

ToC and a ToC Based Project

THEORY OF CHANGE IN A DEVELOPMENT PROJECT

BACKGROUND – WHAT IS A THEORY OF CHANGE?

As development practitioners, we are generally quite good at identifying *what* changes we believe need to happen, *why* we should implement certain projects and activities to affect that change, and *how* different projects, project components, or project activities fit together. When working in complex environments with multiple interacting systems, it is equally important to identify and substantiate the *rationale* and *assumptions* which underlie the *whats*, *whys* and *hows* of our work, as these ultimately determine how effective a project will be.

A ToC is just that: a complete, comprehensive, evidence-based articulation of our best understanding of how we believe change may happen to bring about a given set of results.

A project ToC is often depicted as a diagram which visualizes the various changes, and relationships between those changes necessary to achieving a long-term outcome or goal.

Typical components of a ToC include:

- **Long Term Outcome** – the ultimate desired goal of the project or intervention.
- **Change / Causal pathway** – a single cause and effect pathway amidst all the cause and effect pathways in the ToC.
- **Preconditions** – the intermediary changes (outputs and outcomes) within a causal pathway that are necessary to achieve the project’s high-level outcome or end-goal.
- **Rationale** – the underlying logic and evidence that support the plausibility of connections in a pathway.²
- **Assumptions** – a factor which is accepted as true or certain (*with varying degrees of evidence*) believed to be critical to achieve the anticipated precondition.

Resources on Theory of Change

- [Theory of Change: Facilitators Guide](#) - TOPS
- [Review of the use of ‘Theory of Change’ in international development](#) by Isabel Vogel
- [Theory of Change – UNICEF Methodological Brief](#) by Patricia Rogers
- [Theory of Change Review](#) – Comic Relief
- [The Community Builder’s Approach to Theory of Change](#) The Aspen Institute

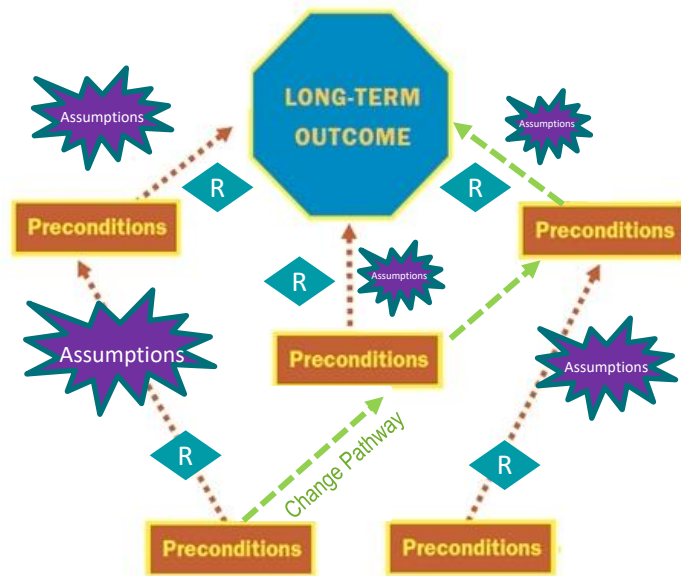


Figure 2. Elements of a ToC. Adapted from the Community Builders Approach to ToC (Anderson, 2009)

² USAID’s Office of Food For Peace Policy and Guidance for Monitoring, Evaluation, and Reporting for Development Food Security Activities

Most ToC's we are familiar with are more complicated than the example above, and look something like Figure 3 below.

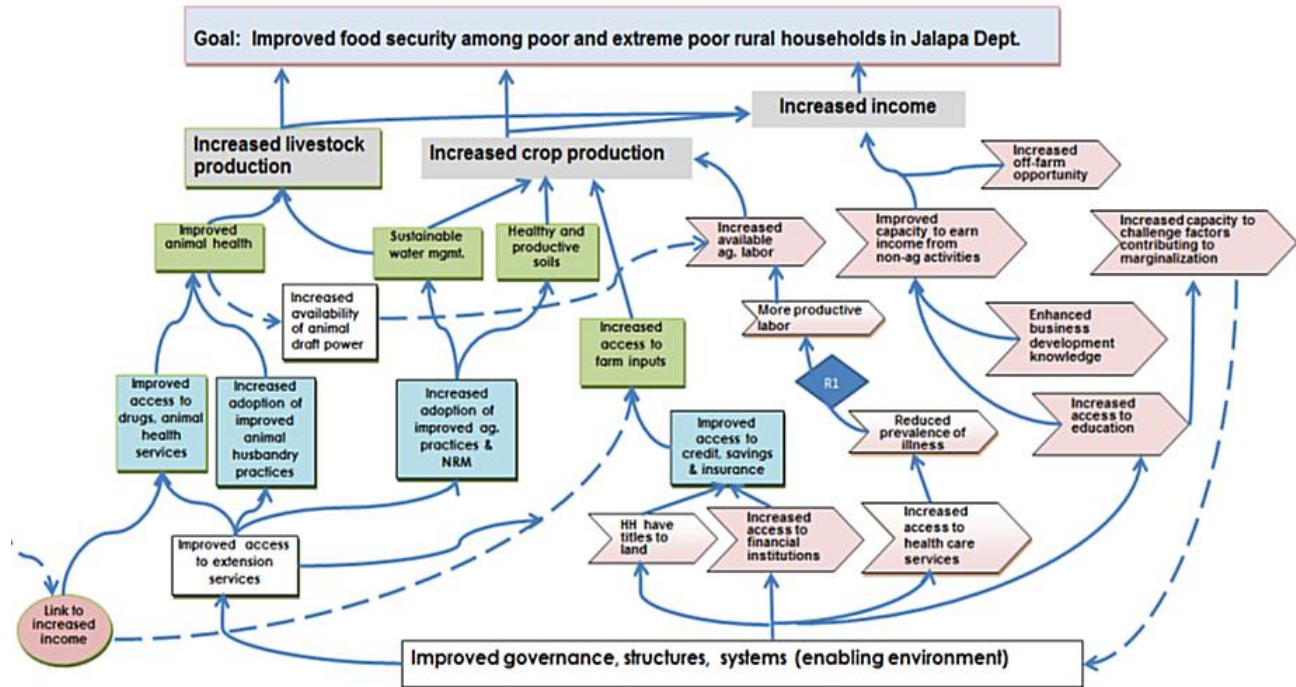


Figure 3. Theory of Change for the Food Security in Jalapa project, derived from the [TOPS Theory of Change Facilitators Guide](#) (Starr & Fornoff, 2016)

HOW ARE A TOC BASED PROJECT AND LOGFRAME/RESULTS FRAMEWORK BASED PROJECT DIFFERENT?

Managing a ToC based project is different than one that is designed around a logframe or results framework. As described, a ToC is our *best* understanding of how change *may* happen. Emphasizing the words “best” and “may” indicates awareness that the ToC is based upon multiple hypotheses and systems, which are complex and ever changing. Our understanding of how change happens in a system at the beginning of a project will change over time as we attain more experience, collect more information and as the environment and systems change. In this way, a ToC is a “living” framework – requiring frequent testing, revision and adaptation based on evidence. In addition, a ToC depicts relationships within, *and* between causal pathways. A logframe, on the other hand, depicts change as a more linear process.

Table 1. Differences between a Theory of Change, LogFrame, and Results Framework

Feature	Theory of Change	LogFrame	Results Framework
Anticipated Outcomes	✓	✓	✓
Anticipated Outputs	✓	✓	✓
Relationships Between Outputs/Outcomes Under a Single Objective	✓	✓	
Relationships Between Outputs/Outcomes Under Different Objectives	✓		
Assumptions Associated with Different Outcomes	✓	✓	
Frequency of Revision	Continuous	With Project Re-Design	With Project Re-Design

MANAGING A THEORY OF CHANGE BASED PROJECT

The dynamic nature of a ToC demands a project management, monitoring, and evaluation approach which supports continual reflection, learning, and adaptation. This requires regular monitoring and analysis. M&E play a crucial role on a project team – leveraging knowledge of data gathering and analysis to help the team better understand how the project design, approaches and activities are affecting the change laid out in the project ToC.

FIVE PRINCIPLES TO SUCCESSFULLY MANAGING A TOC BASED PROJECT

Principle 1: Culture of Curiosity and Exploration

ToC is a ‘living’ framework, which changes as we gain experience and collect new information. Promoting a culture of curiosity, exploration, and analysis will help ensure that your team is continually looking to enhance their understanding of the change their work is affecting.

Principle 2: Intentional Collaboration

Every project has multiple stakeholders, potential champions, and collaborators who can augment, support, or expand impact. It is important to engage both internal and external staff and partners to share knowledge, reduce duplication of effort, and magnify project influence. Identifying and engaging stakeholders in the design, revision, monitoring, measurement and analysis of the project ToC promotes lean data management, collaboration, learning, and adaptation within your own and other projects.

Principle 3: Continual Monitoring, Measurement, and Analysis

To effectively implement a ToC based project in a complex, ever-changing environment, a project team needs to continually monitor, measure, and analyze ToC outcomes, causal pathways, rationales, and assumptions. In addition, ToC based project M&E focuses as much, if not more, on monitoring the “why” and “how” change is, or is not happening. This requires the use of additional quantitative and qualitative monitoring methods such as focus groups, in-depth interviews, social network analysis, and outcome harvesting.

Resources For Collaboration, Learning, and Adaptation.

- [USAID Learning Lab Site](#)
- [CLA Framework and Maturity Matrix Overview](#)
- [Case Studies on CLA: USAID's Case Study](#)

Principle 4: Utilization Focused Reflection and Learning

Iterative monitoring, measurement, and analysis is only as good as the reflection and learning which comes out of it. Utilization-focused³ reflection and learning promotes active involvement of the primary intended users of the monitoring, measurement and analysis in reflection and learning activities.

Principle 5: Adaptive Management

Open curiosity and continuous monitoring, evaluation, and learning does not do us much good without an adaptive management approach. The ToC and the associated project strategy need to adapt as learning takes place. A management system for a ToC based project includes the following features:

1. Regular, ongoing internal staff dialogue
2. Regular “pause points” to bring staff together to reflect
3. A clear Learning Agenda
4. A creative, nimble team that is willing to take some risks
5. Dynamic managers who can effectively communicate with and convince staff members, partners, project participants, and donors to test what’s working and potentially change course.

³ Adapted from Utilization Focused Evaluation (Patton, 2008)

GUIDANCE

Implementing Theory of Change Validation in Development Projects

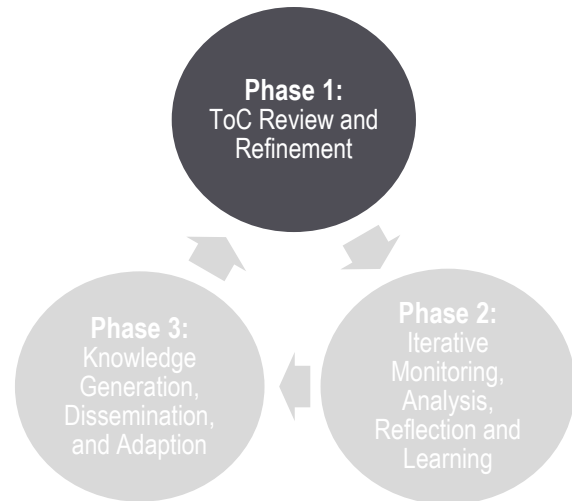
PHASE 1: TOC REVIEW AND REFINEMENT

Phase 1 Steps:

- Step 1: Build a Shared Understanding of, and Commitment to the Project ToC, and ToC Based Project Management Approach and Processes
- Step 2: Review and Refine ToC with Internal Team
- Step 3: Review and Refine ToC with External Stakeholders

STEP 1: BUILD A SHARED UNDERSTANDING OF, AND COMMITMENT TO THE PROJECT TOC AND TOC BASED PROJECT MANAGEMENT APPROACH AND PROCESSES

Building a shared understanding of, and commitment to the ToC based project management approach is critical. Continuous project monitoring, measurement, learning and adaptation requires buy-in from all staff – from finance and procurement, to technical leadership and M&E.



Recommended Action 1: Leading an ‘Overview of the ToC Based Project Management Approach’ Meeting

Before diving into the specific project ToC, M&E staff should work with project leadership to plan and convene a meeting with the project technical, finance, and other teams to discuss the unique nature of managing a ToC based project. The main objectives of this meeting are to:

- 1) Gauge staffs’ level of familiarity and experience with ToC;
- 2) Provide an overview of the major elements of the ToC;
- 3) Provide an overview of different approaches and processes used to manage a ToC based project.



Special Discussion Topic – ToC Based Project Management & M&E Resource Needs. Managing a ToC based project can require more planning, time, human, and financial resources than other projects. Specifically, the project management team will need to dedicate additional resources for: 1) monitoring and measuring specific ToC outcomes and assumptions; 2) outcome / causal pathway analysis, reflection and learning; 3) carrying out additional learning activities to understand “why” changes are or are not being affected; 4) generating knowledge and facilitating knowledge sharing activities; 5) implementing project adaptation activities



Special Discussion Topic - Organizational Culture and ToC Based Project. A project management, monitoring, and evaluation approach which supports continual reflection,

Resources for Facilitating a Shared Understanding of ToC

- [Theory of Change: Facilitators Guide – TOPS](#)
- [Creating Your Theory of Change – NPC’s Practical Guide](#)

learning, and adaptation must also generate an organizational culture which promotes openness, critical analysis, creativity, exploration, honesty, and respect.

Continual reflection, learning, and adaptation requires a team which can openly, honestly, and respectfully work together to identify changes which will improve project success. This will require staff to let go of previous designs and change course, which can be difficult for staff who have invested much time and energy into a project design or activity.

Project leadership has a critical role in creating an environment where this can happen. Through 1) demonstrating openness, curiosity, willingness to try new things and respect for diverse viewpoints, and 2) creating incentives and rewards for the adoption of these behaviors, a project leadership team will help to build a culture which supports continual reflection, learning, and adaptation.

Resources for Building Open-Minded and Collaborative Teams

- [An Epic List of Great Team Building Games](#)
- [Team Building Without Time Wasting – Harvard Business Review](#)
- [Team Building – World Health Organization](#)

M&E Staff can also help to build this trust by modeling good communication, openness to new ideas, and demonstrating judgment-free questioning. Team-building activities can help you and your team build trust, help staff get to know one another and break down cultural, socio-economic, and other barriers which can often get in the way of good teamwork.



Special Discussion Topic – Importance of the PMELP in monitoring and measuring outcomes and assumptions, validating causal pathways, and integrating learning into project design.

During the overview meeting, it is also important for the M&E Team to help staff understand the different elements of project Monitoring, Evaluation, and Learning (MEL), and how these elements help the project learn and adapt.

ILLUSTRATIVE CASE STUDY

Phase 1, Step 1: Building a Learning Culture and Understanding of ToC and Implementing a ToC Based Project

The FSJ project leadership knew that it was going to be extremely important to build a team and project culture which would embrace continual reflection, learning, and adaptation. From the very beginning, project leadership designed activities which would encourage staff to be openly honest, respectful, and collaborative. FSJ leadership planned a 3-day workshop to review the ToC. During this workshop, they created activities which broke the project team into smaller groups to review, discuss, identify questions, and make recommendations for how to effectively implement a ToC based project. The small-group activities provided opportunities for staff to engage in dialog, think critically, and build relationships. In one of the activities, the project leadership asked the different teams to identify ways in which project management could support openness, honesty, creativity, reflection, learning and adaptation in the project. Project management rewarded creative ideas with small prizes – such as a new stapler, a poster of a favorite musician or dinner with the COP. Through this activity, project leadership demonstrated that they were open to and wanted project teams to be creative, open and honest with project leadership, and encouraged staff to work together to identify and ‘own’ actions and behaviors which would promote continual reflection, learning, and adaptation.

STEP 2 – REVIEW AND REFINE THE TOC WITH INTERNAL TEAM

ToC’s are often first developed by staff located at an organization’s headquarters, six months to a year prior to project award and inception. These ToC’s may not always be the most accurate reflection of reality on the ground. In addition, project staff need a shared understanding of, and commitment to 1)

the intervention areas; 2) anticipated outcomes, and 3) project activities. A strong, shared understanding will help project teams, leading different activities, to appropriately sequence, complement, or supplement each other.



Recommended Action 1 – Internal ToC Review Workshop

The M&E team should work with project leadership, and, if desired, an external or headquarters facilitator or other field staff member who is knowledgeable about the methodology, to design a 1-3-day all-staff workshop to review the ToC. This review is best led by the project COP or Manager. The TOPS ToC Facilitation Guide is perhaps the most well regarded resource and guidance document for facilitating the development of a ToC. It includes several activities that can be used to help you and your team review and refine your ToC.

Role of an M&E Officer in Reviewing the ToC

- Create, and promote a judgment-free space for analytical thinking and questioning
- Ask hard, challenging questions which test staff's claims, opinions, and perspectives
- Assist with gathering evidence to support ToC assumptions
- Become familiar with ToC supporting evidence, and be ready to explain it to others
- Understand how the projects' ToC aligns with the donor and host governments development models

Ultimately, your team should perform three related review and refine activities:

- 1) Activity 1: Relevance – Reviewing relevance of objectives and outcomes
- 2) Activity 2: Rationale – Reviewing the underlying logic and plausibility of connections in a pathway
- 3) Activity 3: Outcome Analysis Table – Recording hypothesis, assumptions, evidence, risks, and risk mitigation measures for a project ToC

Activity 1: Relevance. The first step is to review the relevance of outcomes prioritized by the project design team.

During development of a project ToC, the design team should have identified outcomes your consortium has the capability to affect, completed a stakeholder mapping to identify outcomes other organizations are working on, and proposed measures to complement, support, and coordinate to minimize redundancy and make the most effective and efficient use of project resources.

However, it is not only possible, but probable that the current reality on the ground is different than when the ToC was first designed or last reviewed. Some outcomes may no longer be relevant, and other outcomes, which previously were not identified as relevant to your project scope, may now be relevant.

We recommend that a ToC based project team review the relevance of outcomes your organization has prioritized at project inception at the beginning of a projects implementation and each year prior to annual workplanning.

To review the relevance of outcomes for your project's scope of work, begin with the highest-level outcomes, and then, working your way through the full ToC, ask the questions:



- Is it critical to achieving a higher objective / goal in your ToC?
- Does the outcome continue to be a challenge?
- Are other projects/organizations/actors working to address the outcome or associated challenges?

- Does your consortium have the technical, operational, and financial capability to affect change around the outcome?

Outcomes which meet the above criteria should be considered relevant, and thus prioritized to be addressed by your project.

A completed analysis of relevance should result in a ToC in which some, but not all outcomes are selected to be addressed by your project, such as those outcomes highlighted in red in the figure below.

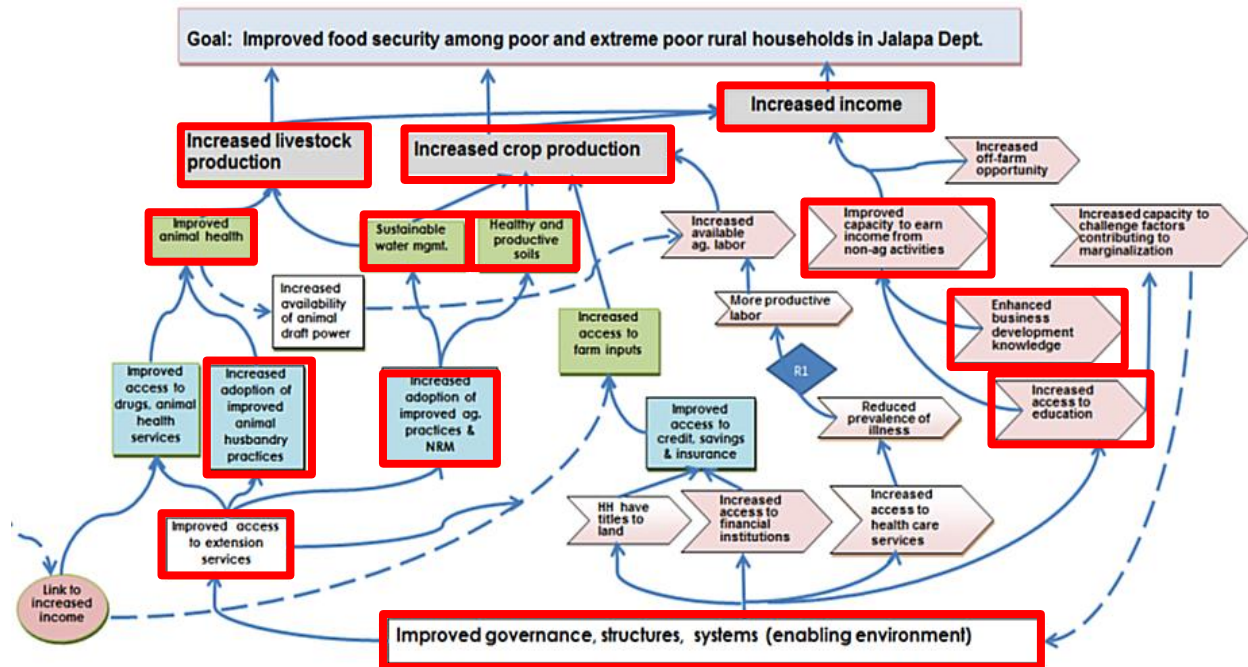


Figure 4. Relevant Outcomes in the FSJ Project, derived from the [TOPS Theory of Change Facilitators Guide](#) (Starr & Fornoff, 2016)

While your project will not directly affect change in all outcomes within a project ToC, change, or lack of change in those outcomes your project will likely affect the outcomes your project has selected. It is important to monitor these outcomes through your own project M&E or through coordination and collaboration with other projects, donors, government agencies and other stakeholders.

Activity 2: Rationale – Identifying Hypotheses, Necessary and Sufficient Preconditions, Assumptions, and Evidence. Starting with a ToC’s higher-level outcomes and working your way down, ask the following questions:

- Q**
- What is the hypothesis?
 - Are the identified preconditions necessary?
 - Are the identified preconditions sufficient?
 - What assumptions are being made?
 - What evidence is there to support the hypothesis?

Hypothesis

For each outcome, identify the hypothesis.

Example: Hypotheses in the FSJ ToC.

In the example to the right, derived from figure 3, the hypothesis for the prioritized outcome “Increased adoption of improved animal husbandry practices” is: *Improved access to extension services will lead to increased adoption of improved animal husbandry practices.*

Necessary and Sufficient Preconditions

For each hypothesis, assess whether the preconditions are necessary, and sufficient.

Example: Necessary and Sufficient Outcomes in the FSJ ToC.

In the example to the right, the FSJ team noted that while improved access to extension services is *necessary* to increase adoption of animal husbandry practices, it was not *sufficient*. Social support and pressure is also needed. They cited anecdotal evidence – the annual report from a previous project indicated that communities with strong peer-to-peer farmer networks had greater adoption rates. They revised their ToC by adding the outcome: “Increased Social Support and Pressure”

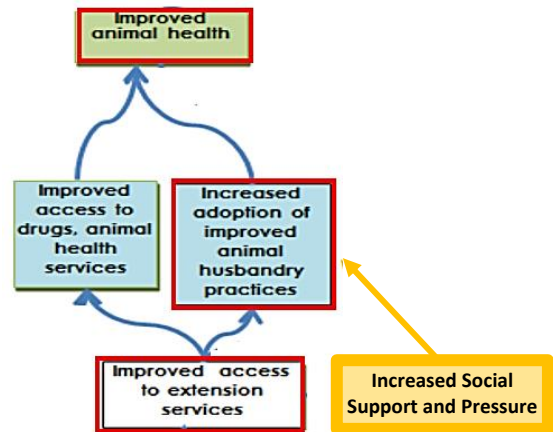


Figure 5. Necessary and Sufficient Preconditions

! Special Consideration – Evidence Supported Review and Refinement.

We bring with us our own experiences and theories of how change happens. However, knowledge gained from one experience, in one place, at one point in time, might not necessarily be true to a new project, in the same or different place, at a different point in time. Evidence is the best weapon to protect us from our biases.

Reviewing evidence can help a team identify:

- 1) **High Risk Points:** outcomes which have hypothesis or assumptions which lack evidence and thus need to be monitored more closely
- 2) **Important Learning Opportunities:** outcomes around which the project could advance learning

Resources for Finding Project Evaluations and other Forms of Evidence

- [USAID Development Experience Clearinghouse](#)
- [Evidence for Policy Design at the Harvard Kennedy School](#)
- [International Initiative for Impact Evaluation \(3ie\)](#)
- [ALNAP Humanitarian Evaluation and Learning Portal](#)
- [Abdul Latif Jameel Poverty Action Lab \(J-PAL\)](#)
- [Resources for Finding and Using Evidence Reviews and Evaluations - Innovations for Poverty Action](#)

In reviewing the hypothesis, preconditions, and assumptions in a project ToC, a team should assess whether: 1) There evidence to support the hypothesis, preconditions, and assumptions; 2) The evidence is sufficient and reliable.

Project teams should consider both “hard” and “soft” evidence to support their ToC analysis. While hard-evidence is important, soft, or “anecdotal” evidence can be just as helpful for a team in exploring and testing their project ToC.

Hard Evidence – Statistical	Soft Evidence - Anecdotal
A recent study published by project x in country x surveyed 150 different households and found that children in households with a mother-in-law trained in maternal and child health are 5% more likely to meet WHO growth standards than households in which mothers-in-law did not participate in training	Under project x, in country x, during years 1 and 2, only mothers with children between 6 months to 5 years of age were targeted, and we saw limited gains. In year 3, we expanded training to include mother in laws, at which point in time, we began to hear about, and see an increase in pre-natal visits to the local health facility.

When a team identifies outcomes for which they do not have substantiating evidence, they have two options:

- Option 1: Carry out additional formative research or integrate additional data collection activities into the baseline data collection processes
- Option 2: Include actions to support additional learning about the hypothesis and outcomes as part of the project’s learning agenda

Assumptions.

Hypothesis are often based upon one or more *assumptions* - factors which are accepted as true or certain (with varying degrees of evidence) and upon which the achievement of outcomes are dependent.

There are 3 main types of assumptions which are important to identify when implementing a project-based ToC (Table 2).

Table 2. Three Main Types of Assumptions Associated with a ToC

Assumption Type	Description	Example
Internal Logic	<ul style="list-style-type: none"> • Assumptions Inherent within the Logic of the Causal Relationship 	<ul style="list-style-type: none"> • Increasing respect for women decreases abuse
Methodological	<ul style="list-style-type: none"> • Assumptions related to methodology designed to deliver the results 	<ul style="list-style-type: none"> • Facilitated assistance is more effective than direct assistance
External	<ul style="list-style-type: none"> • Assumptions about the natural, economic, political, social environment, or actions by external actors which could impact results 	<ul style="list-style-type: none"> • There will be recurrent droughts • Project X will provide access to finance for farmers.



Example: Assumptions in the FSJ ToC.

In the FSJ ToC example above, there are several assumptions being made, including (but not limited to):

- Farmers will use extension services if they have access to them. **(Internal Logic)**
- Farmers will use drugs if they have improved access to them. **(Internal Logic)**
- Farmers have finances to purchase drugs **(External)**
- Farmers will use their household finances to purchase drugs **(Internal Logic)**
- Farmers will have livestock to provide drugs to (i.e., livestock will survive recurrent droughts) **(External)**
- Extension services are the most appropriate way to deliver drugs to farmers **(Methodological)**


During the ToC design process, your ToC design team should have identified the major internal logic, methodological, and external assumptions within the project ToC. However, it is likely that the project/proposal design team is not the same team as the project implementation team. Members of the project implementation team may have different experiences and insights than the project design team.

We recommend that a ToC based project implementation team review the assumptions at project inception, and then regularly through-out implementation.

To review assumptions in your ToC, begin with the highest-level outcomes, and then working your way through the full ToC, ask the questions:

Q

- **Internal Logic.** Is there strong foundational evidence that if the lower level outcomes are achieved, the outcome in question will also be achieved?
- **Methodological.** Is there strong foundational evidence that the proposed methodology will be effective in leading to achievement of the desired change?
- **External.** Are there any potential external environment risks/assumptions that could significantly negatively influence this outcome/linkage, which the projects' activities are not currently addressing? *Note-if the answer is no to this question then no explanation need be provided in the ToC narrative.*

 **Special Note.** *The assumption typology presented in this document is an expansion on the definition provided by FFP in their Guidance Document. This was an intentional decision of the authors of this guidance, not FFP. It is the view of the authors of this guidance that identification of assumptions in the **design phase** of a project, serves a different purpose than the **implementation phase** of a ToC based project. For a further description of this distinction please see the assumption analysis box at the end of this section.*

Activity 3: Outcome Analysis Table. For each outcome analyzed, a project team can document the rationale, assumptions, evidence, and risks in a ToC Outcome Analysis Table (Table 3), following the two steps described below.

When filling out the ToC Outcome Analysis Table, in which you will identify assumptions across a ToC, we recommend that a project team focus the analysis on the outcomes and causal streams that the project has already identified as *Relevant (Activity 1)*. Using the below systematic process can help keep your team on track.

Table 3. ToC Outcome Analysis Table

Outcome	Hypothesis <i>(What is the hypothesis associated with the outcome?)</i>	Assumptions <i>(External, Internal Logic, methodological)</i>	Evidence <i>Supporting evidence for assumption OR how the project will test it</i>	Risks <i>(major risks and impact if the assumption does not hold true)</i>
Outcome X	If _____, and _____, then _____.	This assumes: ____, and _____, and _____.	Evidence which supports this rationale and its assumptions is: _____.	The major risks associated with this is that if assumption x, y, or z do not hold true, then _____ will happen.



Example - TOC Outcome Analysis Table for two FSJ outcomes

Outcome	Hypothesis	Assumptions	Evidence	Risks
Improved Animal Health	Improved access to drugs and animal health services, and increased adoption of improved animal husbandry practices will lead to improved Animal Health	Farmers will use their income to purchase drugs	Previous projects report that indeed, farmers do not like to use their personal income to purchase inputs, but they are willing to use finance from VSLAs or banks.	Rural households will not purchase additional drugs or services, which will decrease the likelihood of improved animal health.
Increased Adoption of Animal Husbandry Practices	Increased demand for drugs and animal health services will result in increased supply of those services	Input suppliers 1) Are willing; and 2) have the ability to procure and deliver drugs and other inputs	Study #14 – Market Analysis for Veterinary Input Supply - 80% of input suppliers say they have access to, and would carry other drugs if there was demand	Input suppliers will not carry the recommended drugs and other inputs

ILLUSTRATIVE CASE STUDY

Phase 1, Step 2: Review and Refine the ToC with the internal team

The FSJ team convened a ToC review meeting, involving many of their implementing partners and donor. They worked through each outcome and causal stream, revised some of the project logic, identified some missing outcomes, and completed the ToC Outcome Analysis Table. This discussion revealed some concerns about specific outcomes, the rationale, and assumptions.

For example, they examined the outcome the ToC describes as ‘improved animal health’, which is dependent on ‘improved access to drugs and animal health services’, and ‘increased adoption of improved animal husbandry practices’. The assumptions they identified for this outcome were that farmers will 1) have the resources to purchase the drugs and 2) increased farmer demand for animal drugs would be a strong enough incentive for rural suppliers to source more expensive drugs and veterinary products.

The team had done some preliminary research, prior to the meeting, and could identify evidence for many of the outcomes. However, they still saw some knowledge gaps. The M&E director and CoP assigned team members to do further research and evidence gathering for the identified outcomes and assumptions. Through interviews with staff from similar projects, and desk research, including market analyses and an evaluation of a livestock project in neighboring country, the team found some encouraging supporting evidence. Data on patterns of expansion among rural veterinary suppliers from the market study indicated an appetite by input suppliers to cover more areas around Jalapa. Review of other projects indicated that rural households are often unwilling to use personal income to pay for drugs and services, but are willing to use finance from VSLAs or loans from a bank to procure such goods.

In response, the team revised the ToC, and added an additional outcome – ‘increased access to finance’, as a critical pre-condition. They also decided to adjust their project strategy to include more activities that would contribute to this ‘increased access to finance outcome’. Although robust evidence was found for these two assumptions this was not the case for all of the identified assumptions.

STEP 3 – REVIEW AND REFINE THE TOC WITH EXTERNAL STAKEHOLDERS

Every project has multiple stakeholders whose input and buy-in will influence, and in some cases, determine project outcomes. Seeking insight and feedback, incorporating their priorities, opinions, and

viewpoints into the project design process will help you build a “coalition of the willing”, to help you achieve your goals and magnify the scale and degree of influence that your project will have through co-leveraging networks for mutual benefit.

The ToC Review and Refinement step is a great place to initiate multi-stakeholder engagement and build open collaborative relationships. Table 4 below outlines actors a project should consider engaging and collaborating with, potentially for project/activity design, updates, learning events, or workplanning.

Table 4. Collaborating with External Entities in a ToC based project

Who to Collaborate With	Why Collaborate
Beneficiaries	<ul style="list-style-type: none"> • Information about the efficacy or quality of project interventions • Reveal why change is, or is not happening • Feedback on how the strategy might need to be altered.
Donors and Local Governments and Institutions	<ul style="list-style-type: none"> • Builds trust, transparency and support for the project • Promotes sharing of lessons learned with the larger development community, within and outside the country.
External Local Development Implementers	<ul style="list-style-type: none"> • Cut down on project data collection, learning, adaptation costs • Minimize burden on project participants



Recommended Action 1: External Stakeholder Consultations

Updating and validating the ToC will require additional research and learning. Consultations with external stakeholders will help to test, and strengthen your ToC. Through these consultations, you will likely identify changes to existing outcomes and evidence, new outcomes/preconditions, and new assumptions and risks. In addition, these consultations may also help build interest, engender buy-in, and mobilize support for the project.



Recommended Action 2: Multi-stakeholder Review Workshop

Following internal review, external consultation, and revision of the ToC, a team should consider a final, multi-stakeholder review workshop of the ‘final’ project ToC. Bringing stakeholders together will help cement the culture of openness and collaboration that you began to engender through project design and stakeholder consultations. We recommend a 1-day workshop to review the ‘final’ ToC, as you have already worked with many of the stakeholders in the consultation process, this workshop should focus on the following objectives:

- 1) Build a shared understanding of the project goals and objectives
- 2) Garner insight from external stakeholders including questions, concerns, and recommendations for implementation
- 3) Identify opportunities, and solicit commitment to collaboration and coordination

Assumption Analysis: Design Vs. Implementation Phases

The Food for Peace (FFP) definition of an assumption, for an FFP proposal, is “Assumptions are conditions that are beyond the control of the project, but will likely affect the success of reaching various levels of preconditions, and could affect the overall success of the ToC. Assumptions are conditions that are already in place that you do not expect to change during the life of the project ([TOPS ToC Facilitator Guide, Starr and Fornoff, 2016](#)).” As mentioned previously, the assumption typology in this document is around the identification of assumptions in the design phase of a project, serving a different purpose than the implementation phase and is an expansion on the definition provided by FFP in their guidance document.

*In the **Design Phase**, an organization should work to identify all types of assumptions – internal logic, implementation, and external. However, where a project can make adaptations / mitigations to effect on an assumption, the team should include those adaptation / mitigation actions into the project design. At the end of the design phase, the project should **ONLY** present those assumptions which your project will not influence or effect.*

For example, there is an assumption that if farmers have access to extensions services, they will use them. In the design phase, the project should design adaptation / mitigation actions which the project believes will increase the likelihood of farmers using the extension services.

*In the **Implementation Phase**, identifying and analyzing assumptions that the project will effect or change – including internal logic, implementation, and external is still important. Every assumption has some amount of risk associated with it. If we do not explicitly identify all assumptions, including those assumptions we can influence or effect, then we may not necessarily identify all the risks associated with our project. And, if we don’t identify those risks, we likely will not monitor them during implementation.*

Taking the previous example, ultimately, we cannot make a farmer use extension services. This is a risk. However, we can monitor whether our actions to minimize the risk are effective. If we had not identified this assumption in implementation, then we would not necessarily monitor the risk. Monitoring the risk is important: It helps us to learn:

- *The extent to which the assumption is a risk in the context of the project/country*
- *To what extent, and how our actions to minimize the risk are or are not being effective.*

PHASE 2: ITERATIVE MONITORING, ANALYSIS, REFLECTION AND LEARNING

Phase 1 of the guidance document described the process for reviewing, refining, and planning for implementation of a ToC based project.

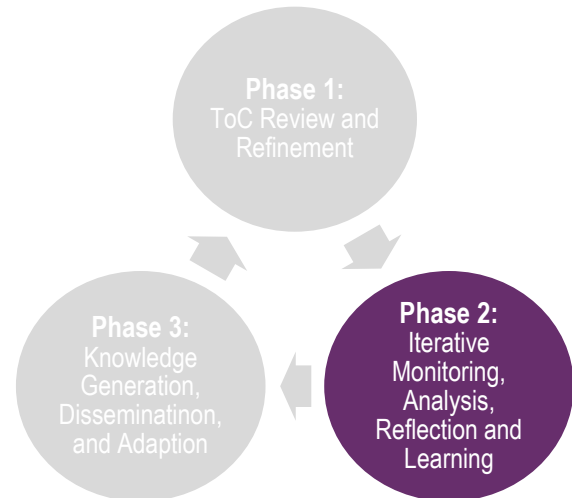
In **Phase 2**, we will discuss a process for iterative monitoring, analysis, reflection and learning, including the development of a ToC Based Monitoring, Evaluation, and Learning Plan (MELP) to monitor and measure a ToC.

While a MELP includes several different elements, for the purposes of this guide, we are going to focus on two of the key elements of the MELP which are critical for effective monitoring, evaluation, and learning for ToC adaptation and validation:

- 1) The **ToC Monitoring Framework**; and
- 2) The Project **Learning Agenda**.

Phase 2 Steps:

- Step 1: Build a Shared Understanding of a MELP, and the Elements, Processes and Tools for Monitoring, Measuring, and Learning in a TOC Based Project.
- Step 2: Prioritize ToC Critical Assumptions & Outcomes for Monitoring
- Step 3: Developing a ToC Monitoring Framework
- Step 4: Developing a Project Learning Agenda



STEP 1: BUILDING A SHARED UNDERSTANDING OF MEL, AND THE ELEMENTS, PROCESSES AND TOOLS FOR MONITORING, MEASURING, AND LEARNING IN A TOC BASED PROJECT

Every staff person on a ToC based project has a role in Monitoring, Evaluating and Learning (MEL). Project leads are often responsible for project and activity design, and working with the M&E team to develop appropriate outcome and activity MEL activities and resources. M&E teams are often responsible for helping the project team review the project TOC, selecting appropriate outcomes for monitoring, and developing MEL tools and processes. Even operational, financial, and HR specialists have a role – ensuring appropriate operational design, financing, and staffing to effectively carry out MEL activities.

Role of an M&E Officer in Phase 2

- Ensure project teams understand a MELP and the elements, processes and tools for MEL in a ToC based project
- Assist project leads in developing high-quality learning questions
- Spearhead the decision-making for data collection mechanisms
- Facilitate the collection of qualitative and quantitative data, for ToC testing

Because every team member has a role in monitoring, evaluation and learning, it is important for every team member to have a shared understanding of MEL approaches, processes and tools for a ToC based project.



Recommended Action 1-Leading a ToC Based Project MEL Overview Meeting

Before diving into outcome prioritization for monitoring a project ToC, M&E staff should work with project leadership to plan and convene a meeting with the project technical, finance, and other teams to discuss the unique nature of MEL in a ToC based project. The main objectives of this meeting are to:

- 1) Gauge staffs' level of familiarity and experience with MEL;
- 2) Provide an overview of how MEL may be different in a ToC based project;
- 3) Provide an overview of the different elements of a MELP;
- 4) Provide an overview of how different MEL processes and tools fit into a ToC based project MELP;
- 5) Explore the management and resource implications of ToC based project MEL

What is MEL?

The M&E team lead should lead a discussion of what is MEL. In this discussion, the M&E team lead should solicit all staff persons to contribute their ideas of what is MEL, and what are the different elements, processes, resources for MEL. The M&E team lead should collect all ideas, and then, compare to his/her definition, and the elements involved in MEL.

How is MEL different for a ToC based project?

M&E team lead should lead a discussion of how MEL might be different in a ToC based project. In this discussion, the M&E team lead should solicit all staff persons to contribute. The M&E team lead should collect all ideas, and then compare to his/her own insight.

What is a MELP?

A project Monitoring, Evaluation and Learning Plan (MELP) is a project document which outlines how the project team will monitor, evaluate, learn (MEL) and share this learning with relevant stakeholders, throughout the life of the project. For a ToC based project, we recommend a MELP include the following key elements:

- i. Overview of the Project Team's Approach to Monitoring, Evaluating and Learning
- ii. Description of the Project ToC and ToC graphic
- iii. ToC Outcome Analysis Table**
- iv. ToC Monitoring Framework**
- v. Collaborating, Learning and Adaption (CLA) Plan*
 - a. Overview of how the project will institutionalize and promote CLA*
 - b. Project Learning Agenda*
- vi. IPTT
- vii. Mechanisms for ensuring data quality
- viii. Performance Indicator Reference Sheets (PIRs)

Resources for developing a Project Monitoring, Evaluation, and Learning Plan

- [Handbook on Planning Monitoring And Evaluating For Development Results](#)-United Nations Development Project
- [Monitoring and Evaluation Planning:Guidelines and Tools -Catholic Relief Services](#)

There is no globally accepted way to develop a MELP. For a ToC based project, we recommend you develop a MELP through an inclusive, multi-stakeholder and multi-departmental workshop.

How ToC Based Project MEL Processes and Tools Fit together in a MELP

A ToC based MELP integrates several monitoring and evaluation processes and tools into a single project function – Learning. Learning involves both continual analysis and reflection within the project and between internal and external project stakeholders. This learning creates a feedback loop, which informs project adaptation.

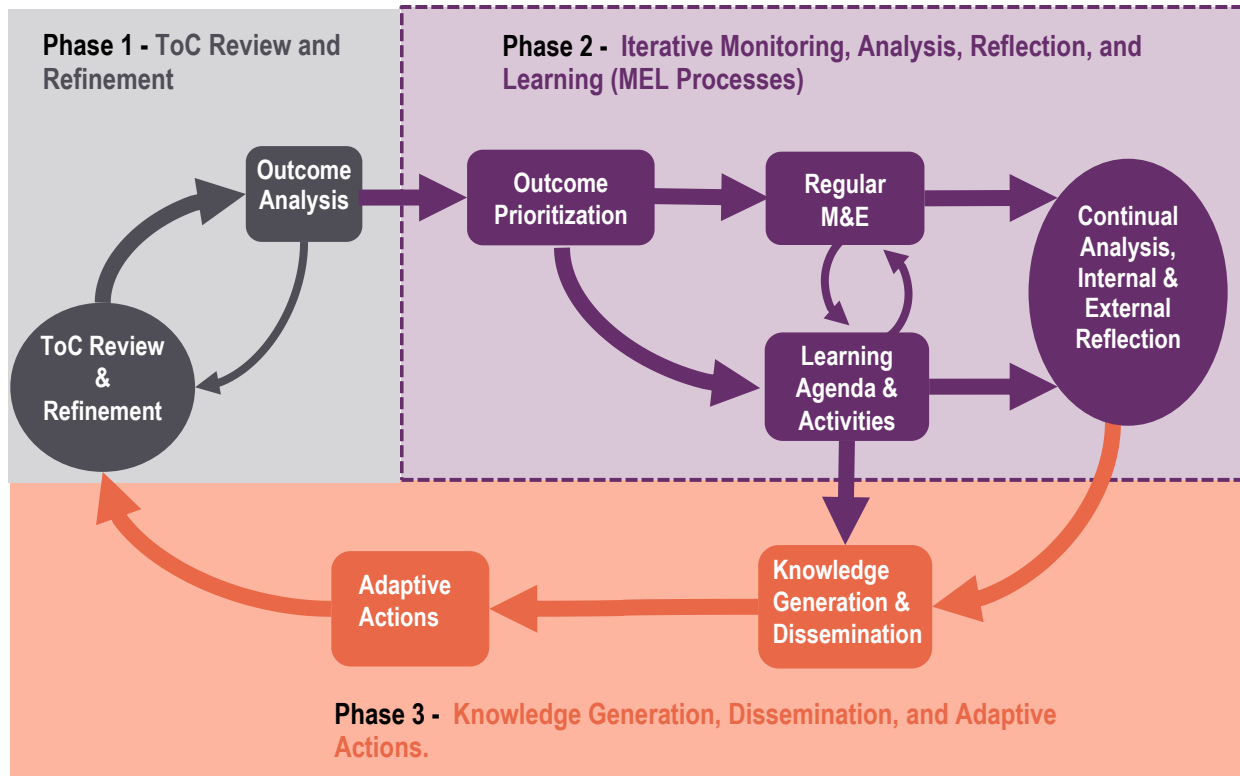


Figure 6: Monitoring, Evaluation and Learning in a Theory of Change Based Project

Management Resource Needs for ToC Based Project MEL

The M&E team should lead a discussion with all project staff, identifying some of the unique management and resource considerations for a ToC based project MEL. Table X below highlights some considerations

Table 5. Management and Resource Considerations for ToC Based Project MEL

Management	Human Resource	Finances
<ul style="list-style-type: none"> Management supportive of learning and adaptation Scheduling regular review/reflection events Relationship with the donors that is transparent about learning and adaptation 	<ul style="list-style-type: none"> Staff persons who are open, curious, analytical Potentially more time spent in the field, collecting data Technical and M&E Staff with the capacity to carry out qualitative and quantitative analysis Staff that have high-level communications skills, that are open to collaboration 	<ul style="list-style-type: none"> Increased budget for more regular learning activities (studies, interviews, focus groups, etc.) Budget for activities in which knowledge is reflected on and shared Budget for training / capacity development activities for staff and partners in MEL

STEP 2: PRIORITIZING TOC CRITICAL ASSUMPTIONS & OUTCOMES FOR MONITORING

In an ideal world, a project team would have the time and resources necessary to monitor and obtain additional learning about all outcomes across a project ToC. However, with limited resources and time, a project team will need to prioritize.

Ultimately, the importance of monitoring outcomes in your ToC is to learn about whether and how project activities are influencing change. Typically, the outcomes that are most indicative of how a project is influencing change are the outcomes that should be prioritized.

ToC outcome prioritization should result in the identification of ~**5-10 outcomes**⁴ the project feels are most critical in terms of learning and tracking the ‘how’, ‘what’ and ‘why’ of change to ensure the project is on the right path.



Recommended Action 1-Assessing Impact, Evidence, Learning, and Feasibility

Prioritizing outcomes requires comparative analysis of outcomes across multiple criteria. In selecting outcomes for monitoring, the team should consider the following questions, potentially using the method demonstrated in Table 5- a build-out of the ToC Outcome Analysis Table-as a mechanism for scoring:



- **Impact:** Which outcomes / assumptions have the potential to most significantly affect the success of the project (achievement of the goal)?
- **Risk:** Which outcomes / assumptions have a significant level of risk associated with them?
- **Learning:** What gaps exist in your technical understanding, which are important for influencing project implementation?
- **Feasibility:** Does your organization have the resources, timeline, or scope for monitoring this outcome?



Example: Outcome Analysis Table Scoring

Scoring – 3 = High Importance, 1 = Low Importance

Outcome	Hypothesis	Assumptions	Impact	Risk	Learning	Feas.	Total
Improved Animal Health	Improved access to drugs and animal health services, and increased adoption of improved animal husbandry practices will lead to improved Animal	Farmers will use their income to purchase drugs	3	3	3	3	12
Increased Adoption of Animal Husbandry Practices	Increased demand for drugs and animal health services will result in increased supply of those services	Input suppliers 1) Are willing; and 2) can procure and deliver drugs and other inputs	3	2	3	2	11

Some outcomes may not be well suited for monitoring or measurement given your organizational resources, timeline, or scope. For example, some outcomes may take longer to achieve than the length of your project, or won't be significantly influenced until the end of the project, such as decreasing stunting rates, and so are not appropriate for the ToC adaptation and validation approach.

⁴ This is a suggested range. The number of outcomes selected for monitoring will be dependent upon the scale of the project and the availability of time and resources.

Data gathering for implementing a ToC based project, meant for informing project management and allowing for nimble adaptation, should not require large-scale, resource intensive surveys. For example, the Women’s Empowerment in Agriculture Index (WEAI) is usually contracted directly by a donor organization and done independently by an external evaluation consulting firm, instead of the development project itself, as the scope of such an assessment is very large and can divert a sizeable portion of project resources that could otherwise go towards project implementation. Asking targeted questions of a small sub sample of project beneficiaries, about select components of the WEAI, would be more appropriate.

ILLUSTRATIVE CASE STUDY

Phase 2, Step 1: Choosing Outcomes for ToC Testing

Following the identification of assumptions, evidence and risk for the relevant outcomes in the FSJ ToC, the team used this table to consider which outcomes had the highest potential for impact, risk, learning and feasibility. Together, they gave each outcome a rating and found that 5 of their outcomes stood out in terms of high scoring. For example, they were particularly concerned that the ‘increased access of farm inputs’ outcome would not actually be a consequence of improved access to credit, savings and insurance, as they were unsure the agrodealers in the region would be able to meet subsequent demand due to capacity and geographic density. Additionally, there was not much evidence in the region to support that agrodealers would be willing to purchase more expensive, improved inputs so this was deemed important for learning. Therefore, this outcome was one of the 5 that received a high rating and would be tracked for ToC validation, allowing for more in-depth inquiry during the project implementation. This additional monitoring, evaluation and learning (MEL) would help them learn more about if/how agrodealers are meeting increased demand for inputs and what other activities might be needed to ensure this outcome is successful.

STEP 3: DEVELOPING A TOC MONITORING FRAMEWORK

After prioritizing TOC outcomes for monitoring, a project team will need to plan HOW to carry out the monitoring. A ToC Monitoring Framework is a helpful tool for designing ToC monitoring activities for these prioritized outcomes.

A TOC monitoring Framework is a framework that outlines:

- 1) Which ToC outcomes a project will monitor
- 2) The metrics and measures which will be used to monitor each of the outcomes
- 3) The data collection mechanism for each of the metrics / measures
- 4) Sampling design
- 5) Timing
- 6) Analytical Strategy

Table 6. ToC Monitoring Framework

Outcomes	Metrics / Measures	Data Collection Mechanism	Sampling Design	Timing	Analytical Strategy

Step 3a. Identifying ToC Outcome Metrics and Measures

Metrics for monitoring a ToC outcome can measure a variety of different dimensions, depending on WHY the outcome was selected for monitoring. For example, if an outcome was selected because it is important for risk, the metric will be different then if it is important to measure achievement.



Example: A ToC outcome with multiple reasons and corresponding metrics for monitoring

Outcome	Reasons	Example metrics
Increased Adoption of Improved Animal Husbandry Practices	Achieving the outcome is critical to the ToC	% of farmers adopting one or more animal husbandry practices
	Lack of Evidence to support the assumption that access to extension services leads to increased adoption	% of farmers with access to extension services who have adopted one or more animal husbandry practices
	Learning: Which practices are most frequently adopted by farmers in region x? Is it different for men versus women?	# of each of the different practices adopted in region x, disaggregated by sex.

A variety of different data metrics might be used for monitoring a prioritized ToC Outcome. ToC outcome monitoring metrics can be donor-required and reported indicators, or custom metrics the project develops to measure outcome achievement.

In addition, you may have more than one metric for a single outcome, depending again on why you want to measure that outcome (you might have multiple reasons, as in Table 7). For outcomes that require time before they show measurable change, a project might desire measurements that show project success along more incremental milestones or desire proxy measurements of the outcome, if it is difficult to measure directly.

Step 3b. Selecting ToC Monitoring Data Collection Mechanisms

A data collection mechanism is the method the project plans to use to collect the data needed for the identified metrics/measures. It’s important to determine your data collection mechanisms at the same time as when the metrics are chosen, to make sure these data collection activities are purposefully scheduled into the staff work plan and integrated into the projects’ budget.

There are several different data collection mechanisms a project might choose to use for obtaining metrics. These include, but are not limited to:

- Desk research
- Key informant interviews
- Focus groups
- Surveys
- Network Analysis
- Spatial Analysis

The project team can discuss which data collection mechanisms will most effectively answer ToC component linked metrics and then include these elements in their ToC Monitoring Framework.

Resources for Using Evaluation Methods for ToC Learning

- [Root Capital](#) Using regression discontinuity design to validate ToC.
- [Give Directly](#) ToC validation and how it can inform development of a learning agenda
- [Asia Foundation](#) ToC and Impact Evaluation



Special Considerations for selecting ToC data collecting mechanisms

Resource Availability/Requirements. *Different data mechanisms require different levels of resource commitment. Household surveys can take a lot of time and manpower. After determining your desired metrics, measures and methods, a “reality check” should be done to assess the required versus available resources. For more on strategic methods for collecting data for a ToC based project, see the box on a lean data approach, to the right.*

Data use. *Data collection mechanism and the data analysis method are intrinsically linked. Data collected a certain way can only be analyzed in a certain way. For example, if there is no control group or baseline data for comparison then it might be difficult to analyze change. Or, if the data sampling protocol doesn’t stratify by target populations (i.e. women of reproductive age that received a specific benefit or training) then the analysis might not provide representative or desired information. These elements of the ToC Monitoring Framework should be determined together, instead of waiting until after the data has been collected.*

Strategies for Using a Lean Data Approach for ToC Validation

- **Conduct targeted sub-sampling of beneficiary populations** instead of the entire beneficiary population. A robust, randomized sub-sampling methodology can save major time and resources. You might just do a few smaller focus group sessions with relevant beneficiary populations or technical experts to get metrics that are representative of the population.
- **Take advantage of built-in data collection mechanisms**, being as efficient as possible so that multiple data points can be collected during one survey/sampling initiative. If you have hired enumerators, in addition to your field staff, or are using a subcontractor for this major data collection initiative then it would be cost-effective to include additional qualitative and quantitative learning assessments into this scope of work.
- **Use secondary/external sources instead of conducting your own assessment**, when applicable-there is no need to replicate others’ work. You can also use secondary/external sources to back up findings when sample sizes are small. Be cautious of data that is old, missing/incomplete, or seems unreliable.
- **Measure changes in intermediate outcome results.** Certain types of outcomes that take time to show measurable change or require a lot of resources to measure may be tracked through intermediate milestones that can give an idea of progress in that major outcome.

ILLUSTRATIVE CASE STUDY

Phase 2, Step 3b: Choosing Data Collection Mechanisms

The FSJ field team had to specify how they would go about gathering the measurements that would connect with the learning questions they selected for their prioritized outcomes. They knew that their organization conducted an annual household survey, so many of the quantitative metrics about topics such as livestock production quantities, and supply of rural veterinary care, could be included in this mechanism. But they also needed additional data collection mechanisms, to collect metrics that could be not covered by this annual household survey. For example, they decided to do a small-scale survey of veterinary agents to obtain data on changes in key areas of animal health. They also decided to administer a test after business development trainings to gauge improvements in knowledge. All of the data collection mechanisms they decided to use went into their annual workplan and budget.

Tracking larger-scale outcomes

For the FSJ project ‘increased animal health status’ is a major outcome, with associated metrics (i.e. milk somatic cell count, mortality in small ruminants, body condition score, etc.) that can be time consuming and resource-intensive to measure. It also might be a few years into the project before any significant improvements in animal health is expected to be seen. Therefore, they choose to only annually track metrics that would less time and resources to measure than doing an annual health status survey. They decided they would annually collect nominal observations from community veterinary agents on animal health status, closely monitor the number of animals that receive immunizations and are receiving quality feed, and after two years of implementation gather information on animal mortality rates. These metrics served as milestone measures of animal health status. This allowed the FSJ project to learn whether it is influencing this major outcome and if it could be more confident that they will see the results that they want when they measure animal health status itself, at the end of the project. If they do not see any achievements in these intermediate metrics, then this could indicate a need to change project strategy/activities.

Step 3c. Determining a Sampling Design

Each data collection mechanism requires a sampling design. For this document, we are equating the sampling design to a protocol for data collection—a detailed pre-defined description of how the data will be collected. This might include:

- the units of analysis (the ‘who’ or the ‘what’ that you are analyzing for your study),
- if there will be a control group and what/who the control group will be, or if it is a block design (to minimize error)
- how the units of analysis will be randomly selected from the population and if there will be stratification of these groups,
- sample size,
- geographic locations, and
- who is responsible for gathering the data (a subcontractor, partner organization, specific field staff, etc.).

Criteria for a Good Sampling Design

- Systematic
- Credible
- Reproducible
- Transparent

For the ToC based approach the sampling design for obtaining a metric needn’t require a large sample size for demonstrating statistical significance, or a form of a control group. However, some sort of protocol must be laid out that specifies how the team will collect this data.

We do not expect a project to include a full description of the sampling design in the ToC Monitoring Framework. Instead, we recommend specifying what annex/where the full protocol for the data collection mechanism can be found.

Step 3d. Determining timing for your data collection mechanism

The ToC Monitoring Framework should feed into an annual workplan and budget. Specifying what the timing of the data collection mechanism will be (when and the frequency) is crucial for ToC Validation approach implementation.



Special Considerations for determining timing for your data collection.

Change Time Horizon. *Different changes happen along different time horizons. Agricultural yields, for example, may take a year to change whereas it might take a few years to observe changes in poverty rates or changes in household income. Data collection timelines should therefore reflect when it makes sense to expect, and therefore, monitor changes.*

Efficiency/Recall. *It is also important to make sure you align the timing of your ToC component measurements so that you are using your resources efficiently (as discussed in Step 2.C) and are allowing for accurate recall/reporting. For example, farmers most accurately recall the inputs they use at the beginning of a crops growing season while they will not know their yields or sales until the end of a crops growing season.*

Baseline/pre- post-test. *The sampling strategy and analytical strategy should also inform the data collection timing. If a measure requires a baseline number, or some sort of pre- post- test, then the timing for the baseline data collection should be specified.*

Step 3e. Selecting a Data Analysis Strategy.

The last component of the ToC Monitoring Framework is the data analysis methodology. There are numerous ways to analyze data. The data analysis method needs to be determined prior to data collection, because it should be aligned with the chosen data collection mechanism and sampling strategy. There should be some thought about what variables need to be measured (i.e. dependent and independent variables, the outcome variables, predictor variables, etc.). One data collection mechanism might require a variety of different types of analysis.

Analyzing Qualitative Data

Qualitative data can be used to obtain specific quantitative metrics, if necessary. However, qualitative data collection is more useful for getting to the ‘how’ or the ‘why’ of project outcomes, as opposed to the ‘what’. This means that qualitative data collection and analysis is more frequently needed for answering learning agenda questions (which are more about the ‘how’ and ‘why’ of ToC outcomes and assumptions). Learning agenda questions are discussed further in section 3.B.

Resources for Sample Design

- [Impact Evaluation in Practice – Chapter 11](#)
- [Better Evaluation – Sampling](#)
- [Sample Size – A Rough Guide](#)
- [Choosing Sampling Techniques – Rutgers University Agricultural Experiment Station](#)
- [How to Choose a Sample Size](#)

Resources for Data Analysis

- [Web Interface for Statistical Education](#)
- [Pell Institute Evaluation Toolkit](#)
- [Better Evaluation – Data Analysis](#)

When you undertake qualitative data collection, the results are in word form. Your data will consist of phrases, quotes, single words or observations. Whereas with quantitative data you can use computer programs like Excel to sort and process your data into trends, there are fewer quick-fix ways of arranging qualitative data so that you can identify any patterns, trends or important outliers (although there are programs that similarly assist with qualitative data analysis). The path you choose to take to analyze qualitative data is highly flexible and should meet the needs of the question you seek to answer.

This is where coding comes in. “Codes serve to label, compile and organize your data. They also allow you to summarize and synthesize what is happening in your data. In linking data collection and interpreting the data, coding becomes the basis for developing the analysis.”ⁱ By developing codes, or categories, based on the context and what you want to know, and applying them to your raw data, you are using a systematic method for identifying patterns and themes, as well as sorting out what might *not* be meaningful in your data. “Coded content can then be quantitatively analyzed for trends, patterns, relationships, similarities, differences etc., from which researchers can get insights and make inferences about the messages within the texts, the writer(s) and the context.”ⁱⁱ

By coding and analyzing your qualitative data, you can answer such questions as:

Q

- What themes/codes keep coming up across the responses I got?
- What issues came up repeatedly that surprised me? What issues didn't come up, which I expected to come up?
- Were there any responses that were extremely different from the typical response?
- Was there a typical response and if so, what did it look like?
- Were certain types of responses associated with a geographic region, group, etc.?

Analyzing Quantitative Data

Once quantitative data has been cleaned, with errors or missing fields removed, it can be sorted and compared using widely-available computer projects like PSP/SPSS, Excel or STATA.

You may want to begin by first identifying some [measures of central tendency](#), such as the median, mean and mode, which attempt to “describe a whole set of data with a single value that represents the middle or center of its distribution.”ⁱⁱⁱ You will also want to assess the [dispersion](#) in the data, to get a sense of how big of a range of values you have in your dataset, and analyze [frequency](#) of values to determine how many values are repeated in the data set.

Resources for Data Cleaning

- [Better Evaluation – Data Cleaning](#)
- [Evaluation Toolkit – Enter, Organize and Clean Data](#)
- [Data Cleaning 101](#)
- [Excel - Top ten ways to clean your data](#)
- [Coursera – Getting and Cleaning Data](#)

Examples of the most common quantitative statistical analyses methods are independent t-tests, paired t-tests, ANOVA, correlational analysis, Chi-Square test, simple regression, and multiple regression. Each of these analyses yields different types of information and requires pre-meditated decisions regarding the sampling strategy.

STEP 4: DEVELOPING A TOC LEARNING AGENDA

An integral part of a ToC based MELP is a Project Learning Agenda. A project learning agenda is a discrete document which describes the project's plan for learning, including:

1. Project Learning Agenda Approach: The project approach for implementing a learning agenda
2. Learning Agenda Themes: The specific themes around which the project will focus its learning
3. Learning Questions: Specific questions within each theme which the project will work towards answering; and
4. Learning Agenda Action Plans: an action plan for carrying out learning activities including data collection, knowledge generation, and knowledge sharing activities, dates, outputs, and responsible persons for each action

Step 4a. Identifying Learning Themes and Learning Questions

Learning themes and questions can be:

- 1) Generated by the project to help inform which activities, and how activities should be implemented to achieve desired outcomes;
- 2) Provided by the client as important questions which they client would like addressed by the project to advance a body of knowledge around a specific topic area
- 3) Inherited from a larger learning agenda set by the client, host country government, coordination bodies, or learning groups.

Ways to Answer a Learning Question

- Secondary data collection/research
- Collect needed information through existing or additional data collection activities
- Utilize indicator (internal or external) data that is already collected and stored in the database for additional analysis (e.g. yield data from the gross margin indicator, to identify which agricultural practices are most effective in increasing yields).

Step 4b. Developing Learning Questions

Learning questions are typically fall into one of 4 different dimensions: *relevance; effectiveness, efficiency, impact, or sustainability.*

- *Relevance* learning questions are designed to inform, or find out about the quality, or relevance of activities.
- *Effectiveness* learning questions are designed to learn more about the why certain activities, combination of activities, or approaches are either achieving or not achieving the predicted outcomes.
- *Efficiency* learning questions are developed to learn about the rate, or degree of investment necessary to achieve outcomes.
- *Impact* learning questions are developed to learn about project impact that is not captured by indicator data
- *Sustainability* questions are developed to learn about the sustainability of project activities or outcomes



Special Considerations for developing learning questions

Complementarity. *Learning agenda questions should be developed to complement outcome monitoring – further helping to advance outcome achievement and understanding of prioritized outcomes.*

Open Ended. *Learning questions should be written as open-ended questions (they cannot be answered with a yes or a no). This might require the addition of “how” or “why” to the end of a learning question.*

Multiplicity – Any one outcome may have one or more learning questions associated with it, and may require a mixed-methods approach (the use of both quantitative and qualitative data). Multiple metrics might need to be collected, to fully answer the question.



Example: Learning Agenda Theme’s and Learning Questions

Theme	ToC Outcome	Outcome Monitoring Metric	Learning Question	Dimension
Production of Nutritious Foods in X region of Country X	Increased adoption of new technologies	% of farmers adopting new technologies, disaggregated by technology, gender, region, etc.	• Which technologies should the project promote?	Relevance
			• Why are farmers NOT adopting new technologies? • What incentives are most effective to get farmers to adopt a new technology? Which is most efficient?	Effectiveness
			• To what extent, has farmers adopting new technologies, influenced increased Yields?	Impact
Household Nutrition in Rural Communities of Country X	Increased access to diversified nutritious foods	Household Dietary Diversity Score	• What household garden crops are most frequently consumed by households, and which are most frequently sold?	Relevance
			• How Is household access to nutritious foods changing? What activities/combination of activities are affecting this change? • How are the community health groups in influencing increased access to diversified nutritious foods?	Effectiveness
			• What impact is increased access to diversified nutritious foods having on women’s BMI?	Impact

Step 4c. Prioritizing Learning Agenda Questions

A project team may generate a large number of learning questions, which is good – it indicates your project team are critical thinkers! However, too many learning questions, with limited resources, can result in staff feeling overwhelmed, and learning being lost. The following guiding questions may be useful to help you in developing learning questions:



- **Does the question clearly state what you want to learn (is it clear and focused)?** *If a question is unfocused or unclear it will be difficult to answer and measurement methods might not provide the information that was desired.*
- **Is the question likely to stimulate fresh or innovative thinking (will it result in useful learning)?** *If you are asking the question from an intellectual point of view, and not to improve project implementation, then the learning question should be eliminated or changed.*
- **Is the question feasible to answer given available time and resources?** *A learning question shouldn’t be too broad or general. You also must be sure that there is some way to answer the learning question, using the methods listed above (i.e. is it measurable).*

Step 4d. Developing Learning Agenda Action Plans

Each set of learning questions should have an associated Action Plan. A template for a Learning Agenda Action Plan can be found in Annex I. An Action Plan is similar to a ToC Monitoring Framework, where the methods for gathering and analyzing the data, that will be used to answer the question, is described, with a timeline for data collection and responsible parties identified.

The Learning Agenda Action Plan has some differing elements though, such as an area for describing how the learning will be used for project adaptation (i.e. what is the purpose, how will it inform project activities and decision making going forward). The Action Plan also asks for narrative on how and with whom the learning will be shared. Learning might need to be shared internally, with specific task leaders, externally, with targeted project partners or beneficiary organizations, individuals, or the donor. Within Phase 2 of the ToC-based approach, sharing of learning is important for facilitating discussion around information, and therefore promoting further learning and discovery. This sharing component is also an integral part of Phase 3 of the ToC-based approach, in which reflection and adaptation occurs.

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Phase 2, Step 4: Developing a ToC Learning Agenda

Choosing Learning Questions

As the FSJ team was filling out their ToC Monitoring Framework, they were also generating learning questions that would give them more contextual information around the outcomes and their associated assumptions. They chose one or two learning question for each of their prioritized outcomes. The learning questions were about either relevance, effectiveness, efficiency, impact or the sustainability of the project strategy. The FSJ team filled out a learning agenda action plan for each of the learning questions. These action plans described how they would gather the data needed to satisfactorily answer the learning question.

Answering the Learning Questions

One of the learning questions the FSJ team developed was “Which project promoted livestock technologies are most effective in increasing farmer income and why?” The action plan for this learning question states that, when the data for the donor-required indicator “Number of farmers applying new or improved technologies” is collected, the beneficiary survey will also inquire as to what were the specific types of technologies that were applied. Additionally, that same survey will provide measurements in milk production, animal health, and the costs of these technologies, or other inputs. Together, this data would be used to determine which technologies resulted in the highest level of monetary returns. The project felt that this quantitative data needed to be supplemented by qualitative data, so they also included farmer focus groups in their action plan, which would focus on which technologies the farmers thought or felt were most effective, most easily accessible, and most easily applied, as well as other preferences or observations about the technologies.

Sharing the Learning

In the learning question action plan, for the question described above, the team also committed to sharing this data at their annual internal workplanning meeting, as well as with the donor. They also planned to incorporate this learning into future technology trainings with other beneficiaries, to demonstrate the effectiveness of the various tools they were transferring and the feedback the project had received from their peers, during the focus groups. Additionally, they intended to include a graph and a short narrative describing these findings in their annual report to the donor.

Special Data Collection Mechanisms

Below you will find more in-depth information on two of the more complex data collection mechanisms mentioned previously, network analysis and spatial analysis. We feel that there needs to be further explanation of how these data collection mechanisms can contribute to ToC validation.

Network Analysis

What is Network Analysis? Network analysis is a quantitative data analysis methodology used to analyze and monitor change across the different elements of a system. Network analysis can be used to map relationships or flows of resources between different types of actors across a system, such as people, groups, communities, organizations, computers, URLs, and other actors in a system.⁵

Resources for Network Analysis

- [International Network for Social Network Analysis](#)
- [Introduction to Social Network Analysis Methods](#)

Network Analysis Products. The products of a network analysis include *network Graphic Maps* – a graphical representation of the different actors and linkages within the system you are analyzing, and *network metrics*, which are mathematical statistics unique to analyzing individual actors, parts, or the complete system.

Network Analysis Data. The data used for network analysis can be collected through primary research such as interviews, surveys, or focus groups, or through secondary research, such as data from relational databases. For example, you might create a network analysis map of members reached by extension services in 2017, (you would be mapping and analyzing the flow of extension services between different extension agents and communities), or the number of clients provided with services over the past 6 months.

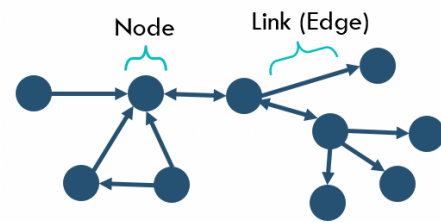


Figure 6. Social network analysis visual of ‘nodes’ and ‘links’

In network analysis language, an entity is called a “node”, and a relationship is called a “link”, or an edge (see figure 6 for an image of a network). Data analysis for network analysis data usually examines the attributes and frequencies of nodes and links of the system.

Network Analysis Applications in a ToC Based Project. Network analysis is a valuable data collection mechanism in a ToC based project as it can be used to 1) Inform activity design; 2) Monitor project progress; and 3) Understand why change happened.

Informing Outcome Selection, Activity Design and Adaptation.

Network analysis can be used as a tool to inform activity design during the inception period. Through primary or secondary data analysis, an M&E team could use network analysis to:

- Identify influential stakeholders in a community, district, region, market system, etc., and who they have relationships with, or resources they have access to.
- Identifying underlying causes, or bottlenecks in networks/systems, such as limited access to livestock extension services, limited access to information on improved health behaviors, or lack of knowledge about government policies, rules, regulations.

Monitoring Project Progress (i.e. outcome achievement)

⁵ (<http://www.orgnet.com/sna.html>).

Network analysis can also be used to measure change over the course of a project.



Example: Network Analysis Applications in the FSJ ToC

For example, for a project with the outcome “increased access to livestock extension services”, an M&E team might carry out a pre-activity network analysis of individuals accessing livestock extension services in a community, or district, and then, in implementation, conduct activities to help expand the number of livestock extension officers, to increase that network. Merely integrating a few survey questions into your annual survey(s) about extension accessibility would allow you to measure the change (pre-post intervention/implementation) in the service delivery network, and access to services over the year.

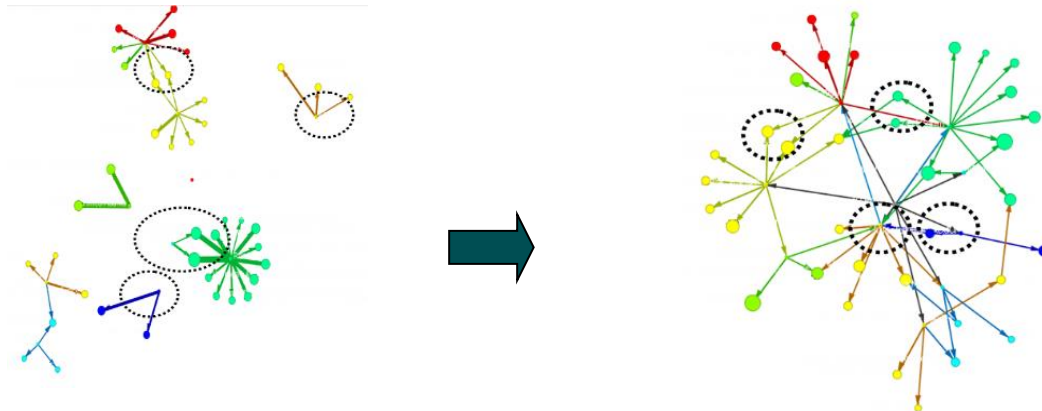


Figure 7. Network Analysis to monitor and measure change of a system over time.

Understanding How, or Why Change has happened - When linked with other quantitative or qualitative data, network analysis can help identify trends between outcomes in a ToC, or between activities and outcomes.



Example: Network Analysis in the FSJ ToC

For example, research has shown that improved social bonding and bridging of capital is important to the ability of households and communities to plan for, mitigate, and respond to a shock or a stress. Network analysis that observes differences in the impacts of shocks or stresses between household/community networks that the project assisted in building/reinforcing and those household/community networks that did not receive such assistance could potentially assist with examining the characteristics of the networks that were most valuable in achieving better resilience outcomes and why.



Example: Network Analysis Data Collection for ToC Monitoring.

ToC Outcome	How you would collect	What you would Map	
		Nodes	Links
Increased Access to Livestock Extension Services	Primary Data: Survey with a sample of herders in district X	<ul style="list-style-type: none"> • Herders • Extension Service Providers 	Frequency of engagement over last year
Increased Reach of Imported Improved Seed Distribution	Secondary Data: Database from private sector, govt, or other importers, seed distributions or sales	<ul style="list-style-type: none"> • Seed Importers • Retail Stores, Cooperatives, Other Seed Recipients 	Quantity of Product Distributed

Spatial Thinking and Geospatial Analysis

Spatial thinking coupled with geospatial technologies and analysis is transforming the way development organizations are designing, implementing, and evaluating approaches to address complex development challenges.

What is Spatial Thinking? – “Identifying, analyzing and understanding the location, scale, patterns and trends of the geographic and temporal relationships among data, phenomena and issues” (Joseph Kerski, ESRI)

Generally, geospatial analysis is an analytical method for combining, examining, and visualizing multiple types of geographic data (data referenced to a specific geographic location) to turn that data into informed decision-making and planning. By examining spatial relationships, you can gain new insights, not only asking questions linked to ‘where?’ but probe deeper and ask ‘why?’

Increasingly, geospatial analysis and methods are being utilized to drive decision-making throughout the project cycle, resulting in leading practitioners and donors critically examining the intersections between ‘Where are we working?’ and ‘Where are the priority development needs concentrated?’

The intersection between Geospatial Analysis and ToC Monitoring. Geospatial analysis complements the reflective and adaptive focus of managing a ToC based project. As with network analysis, geospatial technologies and methods can assist with:

- Informing outcome selection and activity design and adaptation (i.e. priority areas for activities, where resources, infrastructure, and people are located and differences in their attributes, and how these have changed, spatially, in the past)
- Monitoring Outcome achievement (spatial extent of actual change)
- Understanding how or why change has happened (patterns and variables associated with spatial change and the implications of change for landscapes, contexts, and scales.)

M&E professionals are moving beyond basic geospatial analysis (such as mapping the location of agricultural input dealers) to using more advanced approaches to ask if and why project interventions may be more effective in one location than another. However, knowing which methods and techniques to use is challenging. The USAID-funded MEASURE evaluation project developed a guide to provide an overview of how to select and apply appropriate geospatial methodologies for MEL in development—[Geospatial Analysis in Global Health M&E](#).



Special considerations - Geospatial Impact Evaluation

Geospatial Impact Evaluation (GIE) is another innovative approach used to evaluate the impact of development projects. GIE is a quasi-experimental approach that combines spatial data on project activities with high-resolution geo-referenced outcomes (i.e. Geo-referenced household/beneficiary surveys) to statistically match and construct “Control” and “Treatment” locations to estimate project impact across time and space. [AidData](#), through work with USAID’s Global Development Lab has been at the forefront of GIE research.

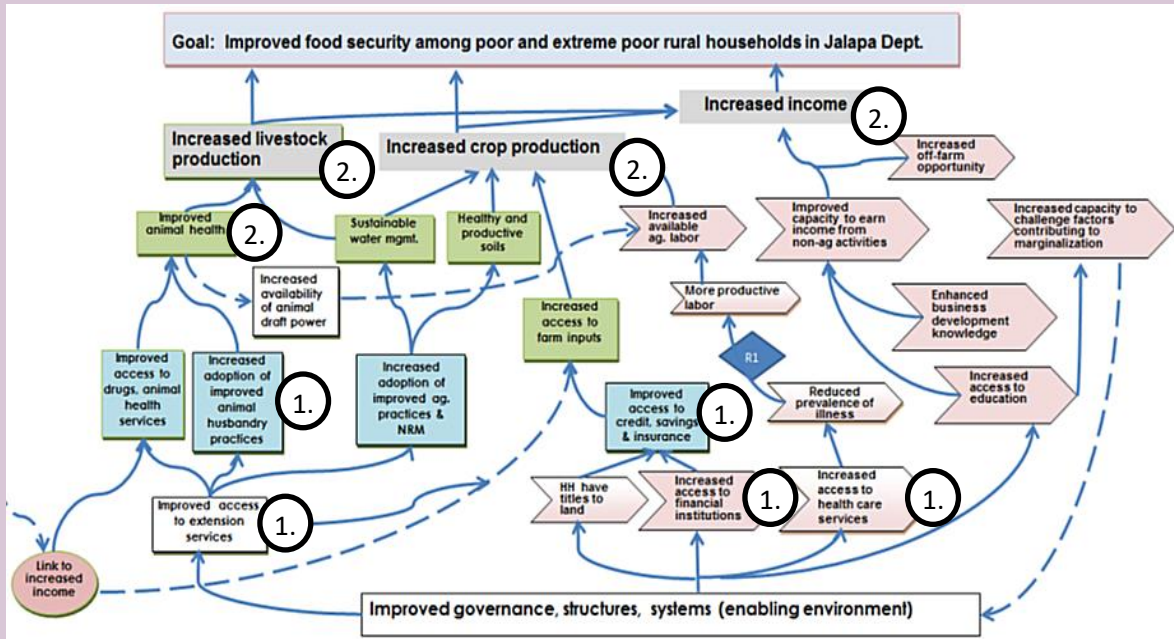
Resources for GIE

- [Geospatial Impact Evaluation Group](#) – Repository of GIE and development articles and resources
- [AidData Geospatial Impact Evaluation](#) – An illustrated guide to AidData’s GIE initiatives
- [USAID Learning Lab Going Geospatial with Impact Evaluations](#) – Webinar Recording

ILLUSTRATIVE CASE STUDY

Using Geospatial & Social Network Analysis to monitor your ToC

In the case of the *Food Security in Jalapa (FSJ)* project, network analysis could be used in a range of different ways to inform design, as well as evaluate change (figure below derived from the ([TOPS Theory of Change Facilitators Guide](#) ((Starr & Fornoff, 2016)).



INFORMING PROJECT DESIGN

Across the three chain domains, there are many different opportunities for using network analysis as a data collection mechanism, to inform the projects design. Network analysis could be used to map community, or household access to drugs, animal, health benefits, access to extension services, access to farm inputs, access to credit, savings & insurance, access to health care services, and other services and products which support a household and community's ability to strengthen food security.

Integrating network analysis into a value chain analysis would help to identify bottlenecks, gaps in access to services and products (1), which, accompanied by qualitative research around barriers to access or delivery of services and products, would inform project strategy and intervention design and development.

Comparative analysis of network analysis findings around availability and access to services (1) to indicators which measure specific food security improvement outcomes (2) – increased livestock and crop production, increased household income, improved animal health – would help a project better understand how systems' structural changes have, or have not contributed to improved food security outcomes.

Similarly, geospatial analysis can be used to map community and household access to animal health services, access to extension services, and access to markets. This can be accomplished by including spatial variables in household surveys (distance to nearest market; distance to paved road) and collecting geo-referenced information for surveyed households. Geospatial analysis and Social Network analysis can often intersect, and, if the geographic data is available (i.e. coordinates or administrative locations), networks can be visually georeferenced (structured so that they are visualized relative to spatial measures or administrative boundaries).

PHASE 3: REFLECTION AND ADAPTATION

While ‘Reflection and Adaptation’, is discussed as a distinct “phase” in this guidance document, we would like to note that reflection and adaptation should happen continuously, as learning occurs. By reflection, we mean setting aside ‘pause points’ to give thought and consideration to incoming information in a collaborative manner. Reflection is critical to CLA and managing a ToC based project because it is “the driving force that leads to organizational learning.”^{iv} A large part of reflection is communicating the learning that has been obtained from data analysis and discussing it with project stakeholders.

PLANNING SPACES AND MECHANISMS FOR REFLECTION

There are many ways to translate this attitude of action-oriented learning into concrete plans. Reflection of learning will rarely occur if the **who, when, where and how** of reflection is not pre-planned, and laid out in a structured manner. If space is set aside for reflection the project team can ask themselves about the validity of critical assumptions and their progress in terms of achieving ToC outcome results and whether ToC adaptation is needed. Often, a well-thought out workplan which outlines these elements of reflection and a budget that ensures resources are set aside for bringing these actors together, will enable these reflective activities.

Who Should Participate in Reflection.

Reflection on learning requires engagement with actors outside the project because no intervention takes place in a vacuum. M&E staff are well-positioned to take a lead role in coordinating the transfer of knowledge throughout the organization, to make sure it reaches those who need it. Typical stakeholders who should participate in learning activities, dialogue, feedback sessions, etc. include project and partner staff, participants in project activities, local government, donors, and external development organizations. Different types of learning should be shared with different stakeholders.

When and Where Should Reflection Take Place.

Reflection on data and analysis (learning) can take place in both larger (slower time frame, more steps involved) and smaller (faster time frame, fewer steps) feedback loops, depending on the project teams’ needs. A feedback loop can be thought of as a full cycle of gathering, assessing, using and communicating about data.

Rather than waiting for the midline or endline of a project to reflect on ToC validity you can plan for more frequent but smaller spaces, or ‘pause points’, for reflection, such

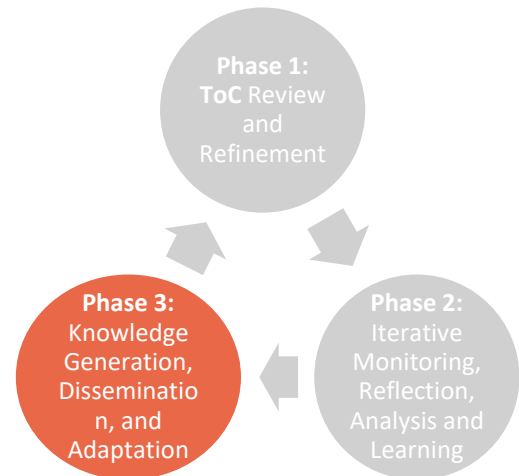


Figure 8. The 3 Phases of a ToC Based Approach

Role of an M&E Officer in Reflection & Adaptation

- Participate in the development of knowledge management materials and tools that integrate learning and transparency of data
- Provide data visualizations that promote learning, reflection and adaptation
- Participate in planned spaces/pause points for reflection and adaptation
- Be prompt and responsive to requests from team members, stakeholders and donors for data and information

Resources on Knowledge Management

- [Knowledge for Health and Development Toolkit](#)
- [Swiss Agency for Development and Cooperation Knowledge Management Toolkit](#)
- [IFAD Knowledge Management Strategy Case Study](#)

as monthly or quarterly team meetings where current data is presented and discussed, to give you bite-sized, actionable pieces of information about specific links or smaller-scale outcomes of the ToC. Other examples are After-Action Reviews (AAR's), peer assists, communities of practice, or learning networks.

Larger feedback loops might involve spaces for reflection that take place semi-annually or annually, and which involve multiple stakeholders. This could be learning events where various development organizations working in the same area share information about their activities and learning, conferences or donor meetings.

Table 7. A Selection of Opportunities for Internal and External Reflection

Internal Reflection	External Reflection and Knowledge Sharing
<ul style="list-style-type: none"> • Trip reports / report-outs • After action reviews • Communities of practice • Weekly, Monthly, Quarterly Team Meetings • Quarterly, Mid-term, Annual Project Reviews 	<ul style="list-style-type: none"> • Learning networks • Donor hosted sharing forums • Case story and other competitions • Quarterly & annual meetings • Learning forums • Communities of Practice • Conferences

Data and Reflection – Making Good Use of Data

For data to be useful and to contribute to learning, it needs to be easily understood. A block of quotes or a STATA printout often isn't very helpful for understanding the main trends or important takeaways from the data you've taken time to collect and analyze. Data visualization is the presentation of data in a graphical form and it "enables decision makers to see analytics presented visually, so they can grasp difficult concepts or identify new patterns." There's no need for fancy software; with Excel, you can easily export your data to a chart or a graph. This is also why spatial analysis (maps) and social network analysis graphics can be so useful. They communicate learning for reflection, in a visual form that can often be more easily understood.

Resources on Data Visualization

- [Elsevier – A Five Step Guide to Data Visualization](#)
- [The Data Visualization Catalogue](#)
- [Tableau – The Beginner's Guide to Data Visualization](#)
- [Duke University - Introduction to Data Visualization](#)
- [Venngage](#)
- [Piktochart](#)

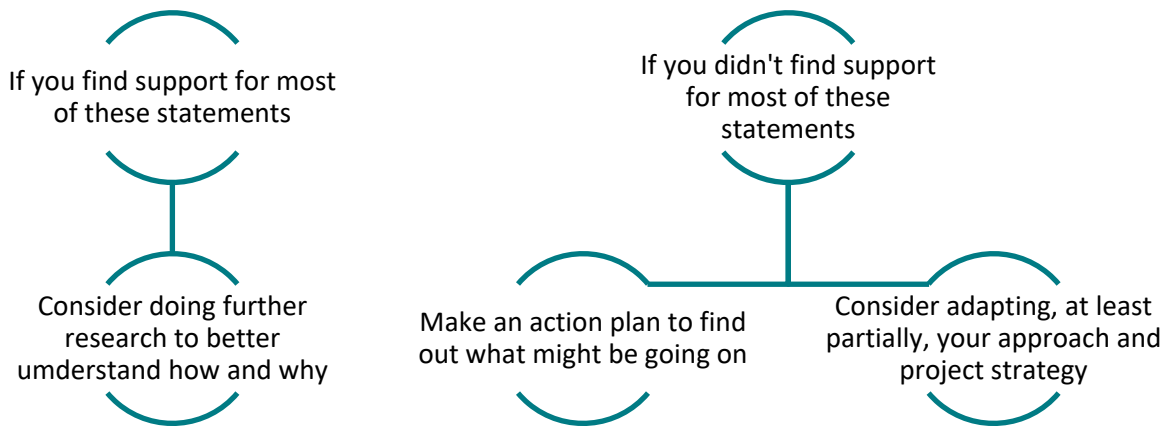
Agile internal methods for learning communication, such as 'live' dashboards (i.e. table and graphs that are linked directly to a project database) can also empower technical leads and managers to regularly learn and reflect on the efficacy of their own individual activities. This type of data transparency and management is a crucial role of the M&E team. Ensuring data is stored in one place and is easily accessible for reflection and adaptation is a major contributing factor to the success of a ToC based project.

Communication and M&E staff should work together to make sure knowledge is in user-friendly formats for decision makers, making them more likely to be read and internalized (i.e. two-page briefs, short reports, infographics, or videos).

In using data for reflection and adaptation, ask:

Q

- Are the **types of change** happening as expected?
- Is the **direction of change** happening as expected?
- Is the **magnitude of change** happening as expected?
- Is the **pace of change** happening as expected?
- Are we **influencing the change**? How?
- Are the groups we are targeting **experiencing the change**?



ADAPTATION BASED ON LEARNING AND REFLECTION

To complete the learning cycle, project activities and processes should be adapted per findings of learning and reflection. There are several different ways in which a project could adapt based on learning:

- Activity designs
- Tools and resources
- Project ToC
- Project MELP
- Learning Agenda
- IPTT – indicators and targets
- Staffing
- Work plan and budgets

Some adaptations such as minor adaptations to activity designs, tools and resources, updating or revising the learning agenda can be carried out quickly without major investment of time and resources. However, major changes, such as changes to the project ToC, project MELP, IPTT, staffing, work plans and budgets may require greater investment by staff across the full project or organization, and may even require donor or client approval. Getting project leadership invested in, and donor/client on-board with an adaptive management approach will greatly help you and your team to facilitate timely, efficient, and effective project adaptation.

! Special Considerations – Leadership in Adaptation

Project adaptation can also be a challenge because it inserts uncertainty into the implementation process. “The challenge is to find a balance between structure and space to adapt.”^{vi} A strong project leader, that supports the CLA culture and recognizes the value of adjusting project strategy to take advantage of opportunities and learning is central to ToC efficacy.

A project manager/director and Chief of Party needs to be the primary champions for the processes, tools, and resources required to effectively implement a ToC based project, with the M&E team supporting their vision of implementation. A chief of party (COP) should:

- *Implement adaptive decision-making processes that are transparent and clear to staff and external stakeholders. Inform and update staff and external stakeholders about decisions taken and the rationale for those decisions.*
- *Assign authority at the appropriate levels to enable greater adaptability*
Encourage a culture of sharing and reflection and enable reflective spaces and activities

! Special Considerations – Getting the Donor On-board

Adaptation in the development context typically requires a strong donor-implementer relationship – one in which donors encourage projects to adapt strategy based on learning, as opposed to staying course on pre-planned routes that have proven to be ineffective.”^{vii} From the project outset, make sure your donor understands and is on-board with your ToC based approach. Adjust the wording in the contract so that adaptation based on learning is part of the agreement. Adapting is much easier when flexibility is built into a projects’ design.

Table 8. Challenges and Potential Solutions to Learning-Driven Adaptation

Challenges	Potential Solutions
<ul style="list-style-type: none"> • Resistance to or discomfort with challenging assumptions • M&E teams are isolated from implementation and design teams • Data quality is inconsistent • Data gathered for reporting or accountability purposes only • Inadequate time and budgetary resources for reflection and learning • Learning questions don’t provide information useful to decision-making • Efficiency suffers when adaptive management style introduces too much unpredictability 	<ul style="list-style-type: none"> • HQ and field leaders encourage sharing lessons learned • M&E staff are leaders of the learning process and help field staff with technical data collection & analysis challenges • Plans for the who, when, where and what of learning and reflection from data are discussed during annual workplanning • Adaptive principles built into project design or added to project by donors • People who design and collect learning questions are the ones leading implementation activities • Procedures should be decided during design to help determine how adaptive decisions are made during the project

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Phase 3: Reflection & Adaptation

At this point, the FSJ project is well underway. Enough time had passed that some initial monitoring data has come in from field activities. The project had set aside 'pause points' to encourage reflection and adaptation. The M&E staff have set up a knowledge management space on their internal project website for the project manager and technical advisors to regularly look at the data that comes in. One of the scheduled times for reflection, a quarterly staff meeting, is coming up. The M&E team work with the different thematic technical leads to create a presentation on the projects' progress in various areas. This includes the data they had chosen to collect and analyze through their ToC Monitoring Framework and Learning Agenda. During the quarterly meeting the field staff discuss the learning they have just been presented with and how this should inform their activities going forward. They decide they should change the focus of some of the training material, that they need to reach out to more informal financial institutions to increase access to finance, and are enthusiastic to see that veterinary agents are already perceiving changes in animal health. They decide that some of their learning questions have been satisfactorily answered already, so they are removed from the learning agenda, and they chose to add one or two additional learning questions and metrics to their ToC Monitoring Framework.

CONCLUSION/KEY RECOMMENDATIONS

Although we have separated this document into three phases, ToC testing is not a linear process, it is cyclical. As learning and adaptation occurs (Phase 3), ToC structure should be adjusted and refined (Phase 1) and ToC Monitoring Framework elements adjusted for relevancy to the adaptations in the ToC structure and project strategy (Phase 2), leading to more learning and adaptation (Phase 3).

We hope that this guidance document serves as a foundation for implementing high-quality development projects. The corporate world realizes the need to use data as a means of business intelligence-to adjust practices as more or new information comes to light and as systems change. Development projects need to take a similar mindset as the systems we work in are also complex and ever changing.

This document will itself change and adapt as new examples of using a ToC based project approach develop and feedback from implementers is given. We wish you luck in achieving all your intended outcomes and higher-level goals.

ANNEX I. PROJECT LEARNING AGENDA PLAN WORKSHEET

Learning Question(s)			
1)			
Action Plans			
	Action	Timeline	Responsible Person(s)
Learning Plan How will we answer this learning questions?			
Adaptation Plan How will we reflect on and adapt our project design?			
Dissemination/ Sharing Plan How and with whom will we share our lessons with our stakeholders?			

ANNEX II: DATA COLLECTION MECHANISM OPTIONS

Measurement Strategy	Description	Benefits of Using this Strategy	Challenges or Drawbacks to Using this Strategy
Existing records	<ul style="list-style-type: none"> • Big data, official statistics, and other forms of existing data can be used without having to do additional data collection procedures. 	<ul style="list-style-type: none"> • Efficient use of time and resources 	<ul style="list-style-type: none"> • It's difficult to quality control the data that goes into existing records. Little may be known about collection procedures or about accuracy. The data may not be entirely relevant to the population in question.
Key-informant Interviews	<ul style="list-style-type: none"> • One-to-one collection of qualitative or quantitative information from select key informants. 	<ul style="list-style-type: none"> • In-depth interviews allow the researcher to gain nuanced insights into the experiences, perspectives and opinions of an individual. 	<ul style="list-style-type: none"> • Conducting in-depth interviews is a time-consuming way of getting information from large groups. • Drawing conclusions about a larger population from one or several in-depth interviews is not possible.
Focus Group Discussions (FGD)	<ul style="list-style-type: none"> • FGD are interviews with a whole group of people, led by a facilitator – participants are encouraged to agree and disagree with one another. 	<ul style="list-style-type: none"> • FGDs allow the researcher to gain nuanced insights into the experiences, perspectives and opinions of a group of people. 	<ul style="list-style-type: none"> • Drawing conclusions about a larger population from one or several FGDs is not possible. FGDs give you information about the type of group that participates.
Surveys	<ul style="list-style-type: none"> • Most surveys include quantitative questions, that ask participants in a certain population (i.e. beneficiary households, farmers, agribusiness owners, etc.) either to give numerical information (such as their income), or to rank experiences, phenomena, opinions, etc. Quantitative surveys also ask questions such as to what extent? How much? How often? 	<ul style="list-style-type: none"> • Surveys allow the researcher to gain information from a large group of people relatively easily. When surveys are administered to a correctly drawn sample, the results can be extrapolated to a larger population than that of the survey participants. 	<ul style="list-style-type: none"> • Surveys require time, skill and staff resources to design, test and implement. They also can take significant time for participants. • Determining a sample size and group for surveying requires technical training, if the survey is to be considered “representative,” or if the findings are to be extrapolated to any population beyond the participants.

Measurement Strategy	Description	Benefits of Using this Strategy	Challenges or Drawbacks to Using this Strategy
	<ul style="list-style-type: none"> Surveys can also include qualitative (or open-ended) questions. 		
Outcome Mapping	<ul style="list-style-type: none"> Outcome mapping (OM) defines outcomes as changes in behavior In outcome mapping, the project is assessed based on its <i>contribution</i> to influencing behavior change rather than on how it has delivered specific services or interventions This method should be used when a team wants to understand more about which actors to target, the changes in behavior they need to undertake and what strategies are best. 	<ul style="list-style-type: none"> This method has tools that can be used independently or brought in later in the project if OM isn't used from the beginning. By focusing on the project's intended and unintended influences, this method can be useful for learning holistically about how well a project ToC has brought about desired changes. 	<ul style="list-style-type: none"> Outcome mapping requires skilled facilitation as well as additional staff resources and time, and therefore greater budgets. This method works best when it is used from the beginning of project implementation through monitoring and evaluating the entire project (though it is highly flexible – don't be deterred from using some of its methods if you can't use it throughout the whole project). This method requires extra training for all staff involved.
Outcome Harvesting	<ul style="list-style-type: none"> Outcome harvesting works backwards, uses a variety of sources to show how an intervention contributed to outcomes, which could be positive or negative, and intended or unintended. Descriptions of the outcomes identified in the relevant intervention community are compared with other forms of documentation to assess how they have contributed to achieving a project objective. 	<ul style="list-style-type: none"> This method is useful in contexts that are highly complex, where little is known about cause and effect, because it works with what has happened, rather than how implementation fared against project plans. It is also useful when outputs and outcomes are difficult to measure. 	<ul style="list-style-type: none"> Outcome harvesting requires training and commitment on the part of staff to execute well. Only detectable outcomes are measured and assessed in this method.
Most Significant Change (MSC) Technique	<p>This method works not to determine how a project has advanced toward completing its objectives, but rather</p>	<ul style="list-style-type: none"> This method works best when the project is highly complex and involves multiple 	<ul style="list-style-type: none"> As with most participatory methods, good facilitation skills and knowledge of the method are required.

Measurement Strategy	Description	Benefits of Using this Strategy	Challenges or Drawbacks to Using this Strategy
	tries to uncover whether and how a project has contributed to changes by collecting “significant change” stories. These ask “What happened? Who did it (or contributed to it)? How do we know this? Is there corroborating evidence? Why is this important? What do we do with what we found out?” ^{viii}	<p>different stakeholders and when relationships of cause and effect are dynamic.</p> <ul style="list-style-type: none"> • MSC is ideal for projects that want to use more participatory methods of data collection/analysis 	<ul style="list-style-type: none"> • This option is one of the more time consuming, as deciding which stories to collect, collecting them and analyzing them takes thought and intentionality. • Collecting stories is a highly subjective process, so a rigorous approach is needed to ensure bias doesn’t affect the interpretation of your results.
Social Network Analysis	Is a quantitative data analysis methodology used to analyze and monitor change across the different elements of a system. Network analysis can be used to map relationships or flows of resources between different types of actors across a system, such as people, groups, communities, organizations, computers, URLs, and other actors in a system	<ul style="list-style-type: none"> • This method works best when a project wants to measure changes in network linkages-the quantity, quality, or other patterns. This can be done through quantitative target-population based surveys or qualitative interviews. 	<ul style="list-style-type: none"> • Often requires interviewing all the actors within a large system, or within a smaller, defined system (sub-sampled communities). You can only track changes within these initially samples systems. • Implementers need to understand different methods for analyzing changes in the networks
Spatial Analysis	Spatial analysis is a method that combines, examines, and visualizes multiple types of geographic data (data referenced to a specific geographic location) to turn that data into informed decision-making and planning. By examining spatial relationships, you can gain new insights, not only asking questions linked to	<ul style="list-style-type: none"> • This method is useful for visualizing differences between variables of interests in different areas and the changes in these areas, allowing for more informed planning and decision-making. 	<ul style="list-style-type: none"> • Spatial analysis might necessitate the use of GPS units for gathering data from the field-level. However, a large amount of spatial data is already available on the internet. • Users need a lever of familiarity with mapping platforms, many of which are open access, to map variables for analysis and learning.

Measurement Strategy	Description	Benefits of Using this Strategy	Challenges or Drawbacks to Using this Strategy
	where? but probe deeper and ask why?		
Collaborative Outcomes Reporting	<p>This method is like MSC. It requires mapping multiple types of data against the ToC to produce a story about how a project contributed to outcomes. A panel of stakeholders are then convened to assess the extent to which the evidence provided tells an accurate story about the contribution of the project.</p>	<ul style="list-style-type: none"> • This approach is participatory and flexible, easily combined with other methods. • This method can be applied across multiple levels of inquiry – from large questions to smaller ones. 	<ul style="list-style-type: none"> • Again, the challenge with this method is that it requires some training and a slight shift of mindset to implement well. • Additionally, it is a more subjective process and therefore requires a sense of humility and caution when coming up with the “stories.”

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