Guidance note 3: Theory of Change approach to climate change adaptation programming
Introduction

'Theory of Change' (ToC) is a critical thinking approach to program design, monitoring, and evaluation which has become increasingly influential in international development. Described as ‘a roadmap, a blueprint, an engine of change, a theory of action and more’ (Stein and Valters 2012: 5), ToC outlines the building blocks and the relationships between them that would lead to the accomplishment of a long-term goal. When done well, this approach enables stakeholders to embed an intervention within a larger strategy and broad, transformative analysis. It is flexible and practical insofar as it clearly articulates a vision of meaningful social change, and then systematically maps out specific steps towards achieving it. ToC is especially well-suited for the design, monitoring, and evaluation of complex, multifaceted, long-term endeavors and ‘wicked problems’ like climate change, conflict transformation, and gender equality. It is not without its critics, however, and there are concerns that if misapplied it might become an onerous (and potentially confusing) bureaucratic requirement rather than a vehicle for transformation.

In this Guidance Note, we describe the Theory of Change approach and explain why it is a good fit for climate change adaptation programming. We highlight its differences with the more familiar logic model / logical framework (‘logframe’) approaches – and also show how they can be used together. We go on to guide the reader through the steps of a hypothetical ToC exercise, and then comment on how to avoid the disadvantages and pitfalls that can occur when applying this model. We conclude by highlighting a ‘real world’ example of how one agency has used ToC to enhance its work.

What is 'Theory of Change'?

In her seminal 2005 manual, Anderson defined Theory of Change as “essentially an explanation of how a group of stakeholders expects to reach a commonly understood long-term goal” (p. 3). Today, there still is no consensus on what exactly constitutes a ToC, nor is there a set methodology for applying it or consistency about the terms that are used. There are, however, core and common elements.

ToC approaches articulate an ultimate ‘big picture’ outcome, and then ‘backwards map’ the steps needed to achieve it. In other words, the stakeholders begin with defining the long-term goal, and work backwards in time up to the present, systematically laying out each step along a ‘causal pathway.’ For each step in the sequence, stakeholders outline clear indicators, thresholds, and assumptions. The end result is usually a diagram (‘change map’), accompanied by a narrative. ToC is also an iterative process; in other words, the strategy would be reviewed regularly and modified to reflect emerging conditions and new knowledge.

ToCs can and are tailored to various levels of analysis and intervention. ToCs are not solely reserved for long-term and large-scale planning. They can also be very effective for mapping out community-based and near-term endeavours as well. Indeed, an overall ‘big-picture’ ToC is usually accompanied by one or more additional ToCs that lays out a detailed strategy to achieve the near-term outcomes. For example, let us imagine that a ToC has been prepared for an integrated CCA programme for communities living along the Mekong River. One of the near-term steps might be to promote flood insurance. The Lao country programme might then design a ToC specifically focused on achieving this one outcome.

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1 ‘Wicked problems’ refer to public policy problems that are deeply complex, intractable, and resistant to solution. The term ‘wicked’ is used not because they are somehow evil, but because they are so difficult to resolve. Because of complex interdependencies, the effort to solve one aspect of a wicked problem may reveal or create other problems.
ToC is not specific to international development, much less to climate change interventions. Its origins lie in evaluation research and social justice advocacy (Vogel 2012a). Many of the best ToC resources were developed to address issues like gender-based violence, housing rights, and education for the poor. Those who are interested in using ToC tools are encouraged to consult materials and manuals that were developed for audiences other than climate change adaptation. The methodologies outlined in them can be easily adapted to your needs.

**Why is theory of change a good fit for climate change adaptation programming?**

Consensus is emerging among M&E experts that ToC is one of the more robust approaches to designing and evaluating climate change adaptation, which is inherently complex, multifaceted, and long-term in scope (see Guidance Note 1). The benefits of working with a Theory of Change include:

- The emphasis on contextual analysis lends itself to programme design and evaluation research that is tailored to local conditions. Climate change may be global, but adaptation to it is fundamentally local. There is no ‘one size fits all.’
- ToC can tie together diverse projects and programmes into a coherent and strategic portfolio that enhances linkages across CCA sectors and scales.
- ToC processes are inherently iterative and flexible. Periodic reflection exercises allow stakeholders to respond to changes in the social, political, or natural environment. This is crucial for M&E of adaptation programmes, which need to accommodate dynamic and emerging conditions.
- ToC processes articulate assumptions that underlie a programme and thresholds that identify what is needed to advance along a causal pathway. This clarifies the logic of an intervention and helps evaluators capture why and how an intervention is – or is not – effecting change. This in turn helps an organisation update its adaptation strategy.
- ToC encourages an open dialogue regarding perspectives and values, resulting in a shared vision and stronger relationships with partners and stakeholders. This is crucial for climate adaptation projects which often require trade-offs to be made in terms of who benefits and who bears the cost.
- ToC evaluations highlight an agency’s contribution and impact towards long-term change in a way that clearly acknowledges the work of other agencies as well as the evolving adaptation context.
- ToC approaches are well-suited to identifying ‘lessons learned’, which is a crucial to build the evidence base on climate change adaptation.
- It is impossible to predict the social, economic, and political consequences of climate change. The flexibility of ToC accommodates the uncertainties that are inherent in adaptation processes.

**How is theory of change different from logic models?**

Logic models and frameworks (‘logframes’) should be familiar to anyone working in international development. Logic models have a narrower scope than ToC. They focus on aligning the component parts of a programme into a hierarchy of clearly-specified goals, outcomes / objectives, outputs / results, inputs / activities, (usually) together with a set of measurable indicators to demonstrate progress. A theory of change, by contrast, is broader. It lays out an ultimate goal (sometimes called a ‘long-term outcome’, ‘vision’, or ‘mission’) which is broken down into a causal pathway with preconditions (‘intermediate outcomes’), indicators, thresholds, and assumptions for each step along the way. It is usually presented as a flow chart.
According to a grant-maker quoted by MacKinnon, Amott, and McGarvey (2006), “logic models connect programmatic activities to... outcomes. But a theory of change also specifies how to create the right kinds of partnerships, hold the right forums, do the right kinds of technical assistance, and help people operate more collaboratively and be more results focused.” These differences are further illustrated in Figure 1 below.

**Figure 1: Theory of Change and logic models compared.**
Derived from Clark and Anderson 2004: 8–10.

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**What is a logic model?**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Activities</th>
<th>Outputs</th>
<th>Intermediate outcomes</th>
<th>Long-term outcomes</th>
</tr>
</thead>
</table>

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**What is a Theory of Change?**

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**Theory of Change – recommended tools**

Free open-access Theory of Change software can be downloaded from [www.theoryofchange.org/toco-software/](http://www.theoryofchange.org/toco-software/). (Source: The Center for Theory of Change)

An interactive Theory of Change template can be downloaded from [www.seachangecop.org/node/2758](http://www.seachangecop.org/node/2758). (Source: Keystone)

An excellent Theory of Change training manual can be downloaded from [www.seachangecop.org/node/215](http://www.seachangecop.org/node/215). This 2005 document by Andrea A. Anderson of the Aspen Institute is a seminal work which presents key concepts in the form of a step-by-step facilitator’s guide. This manual is widely regarded as a classic and continues to be widely utilised.
It should be noted that Theory of Change approaches can and often are used together with, rather than replace, the more common logframes. The usual way that this is done is to develop a broad Theory of Change to capture the ‘big picture,’ and then logframes for individual programmes. For example, a team could design an overall Theory of Change ‘roadmap’ towards climate change adaptation, and then prepare a traditional logframe for selected intervention steps along the way (i.e., the projects that the agency actually intends to implement). Doing so would ground the programme design within a larger contextual analysis and vision of transformative change.

What are the steps in a theory of change process?

As noted above, while there is no set or standardised ToC method, there are common elements. There is some variance in the precise activities, sequence, and level of detail that is recommended. The steps below have been adapted from Anderson’s (2005) facilitator’s guide, which remains highly influential. There are others that are also excellent; we encourage you consult several manuals and select that one that best fits your own needs and priorities.

**Task 1: Identify the goal** (sometimes called a ‘long-term outcome’ or ‘vision’). There should be a clear and specific statement of what the group is working toward. This may seem like an easy task, but in fact there may be important differences that need to be addressed. A vague statement (e.g., “community resilience to climate change”) is too ‘fuzzy’ to be useful. The long-term goal can be broad and ambitious (like a mission statement or a strategic direction), but it does need to be clear enough to serve a springboard for future planning. A better example might be “vibrant, healthy rural communities with sustainable and diversified livelihoods practices that are resilient to extreme weather and climate changes.” We will use this goal to inform an imaginary programme called Climate-Resilient Communities (CRC) below.

**Task 2: Develop a pathway of change.** Anderson (2005) describes this task as “the centerpiece of the theory development work” and it entails identifying and sorting “all the preconditions related to the ultimate outcome of interest into a pathway of change that moves linearly and chronologically toward the long-term goal” (p. 12). Anderson offers several helpful tips and pointers to manage this process, which runs the risk of being “terribly confusing to participants” (p. 12) who are unfamiliar with it.

The pathway of change should be designed via backwards mapping. In other words, the team should start from the goal from task one, and then systematically work backwards in time from it. Stakeholders would identify specific steps (‘intermediate outcomes’) along the way. For each step, the team asks ‘what are the preconditions for the outcomes at this step?’ The answers to this question become the outcomes that come before. Each key precondition thus becomes an outcome statement for a nearer point in time. One point is that certain preconditions may be beyond the scope of the agency’s grasp (e.g., political stability). The implication, of course, is that if the precondition is not met then progress along the causal pathway will be indefinitely stalled.

It is worth emphasising here that the intermediate outcomes that link the early and long-term steps should be as strong and robust as possible, and ideally grounded in a body of best practice. There can be a tendency to fixate on the grand vision and the first steps, with relatively vague intermediate ones. These intermediate steps, however, are just as crucial. It may seem very sensible to construct soil bunds to prevent erosion, or promote insurance protection against severe weather. However, it would be better to be confident whether and how effective these measures are for our context, or what kind of time and resources are needed. ToC steps should be grounded as concretely as possible in an evidence base. ToC works best when the entire causal pathway is a sequence of practical and realisable outcomes.
Let’s return to our example, the imaginary CRC programme. For our goal “vibrant, healthy rural communities with sustainable and diversified livelihoods practices that are resilient to extreme weather and climate changes,” intermediate outcomes that might serve as preconditions could include:

- There is access to a convenient, year-round safe water source for all families, which is sufficient for household consumption, farming, and animal husbandry.
- Farming families have practical strategies and strengthened capacity to cope with droughts and floods.
- Men and women with skills, knowledge, and access to inputs for non-agricultural sources of income.
- Responsive relationships between village, local, and provincial authorities.

**Task 3: Operationalise outcomes.** At this stage, the group would identify how to demonstrate that the specified outcomes have been achieved. This involves both selecting indicators themselves (see **Guidance Note 2**), together with thresholds that signify progress along the causal pathway. Thresholds are distinct from both indicators themselves and from results targets. They identify the point at which an outcome is met – not necessarily what the programme itself is going to achieve during the next year or two.

Let’s return to our hypothetical CRC example. One of our stated outcomes is ‘farming families have practical strategies and strengthened capacity to cope with droughts and floods.’ One of several indicators of this outcome might be ‘percentage of crops sown with drought resistant strains.’ The stakeholders need to identify what level signifies that the stated outcome has been met, even if it is beyond what the programme expects to achieve in the near term. For example, the group might agree that the threshold should be that 80% of crops sown are from drought-resistant strains. This is not a target for what the agency will accomplish in one or two years. There is a critical distinction between ToC change thresholds which may be beyond the reach of a programme’s capacity, and LFA results targets which remain firmly within its grasp.

**Task 4: Define interventions.** At this point the team can start to plan activities. This is also the appropriate point to clearly distinguish between outcomes that the group actually intends to address in a programme from those that are beyond its reach.

In our example of the CRC Programme, one example intervention might be: ‘promote the use of flood- and/or drought-resistant crop strains through education and access to agricultural inputs’. Let’s also say that our team is from an organisation that specialises in agriculture. It lacks to the capacity to implement programmes to address the non-agricultural preconditions towards the long-term outcome. As you may remember, some of the stated preconditions (‘intermediate outcomes’) included water security and non-agricultural sources of income. While the organisation might not address these outcomes directly, the ToC process can help to highlight both formal and informal relationships which can be pursued with partners in order to contribute to these other outcomes. Our team would thus design an intervention strategy within its own organisational mandate and capacity, while also identifying synergies with others who are better-suited to addressing the remaining outcomes. This cooperative approach will be critical in developing coherent responses to climate change.

**Task 5: Articulate assumptions.** The way that stakeholders plot steps along a pathway of change is framed by assumptions about what are necessary and sufficient conditions to achieve success. These assumptions will have a diverse set of roots, including personal values, professional experiences, evidence and research, and analysis of the overall context or environment (Vogel 2012). Anderson (2005) commented, “when a theory of change is built around the wrong
assumptions... even the most elaborate pathway of change can fall apart” (p. 15). From an evaluation research perspective, this can be especially helpful in explaining why something is not working, or why a strategy needs to be revised, perhaps radically.

Let’s return to the example CRC Programme. One of the key assumptions that underpins the agricultural intervention is that climate change will bring about greater incidence of droughts, scanty or unpredictable rains, floods, and extreme weather. While we can confidently expect this on a global scale and over the long term, for the time being the climate in the programme area might be quite stable. Moreover, the drought and/or flood-resistant crop strains that our team is promoting may have other disadvantages – smaller yields, for example, or more expensive inputs. Clearly articulating the assumption “weather instability will be an incentive to modify farming practices” may help to explain why (or why not) farmers are eager or reluctant to adopt new behaviours. This factor can be used to revise the evolving programme strategy over time.

Pitfalls and disadvantages of theory of change approaches, and how to avoid them

Theory of change has its fair share of critics. It is important to acknowledge the potential pitfalls and disadvantages to applying it, in order to help avoid common mistakes and strategic errors.

- **ToC approaches take time to develop.** When done as intended in a thorough and participatory manner, ToC processes can be very time-consuming.

  **Recommendation:** It is important to allocate sufficient resources (time and money) towards developing your Theory of Change. A half-day workshop will not be sufficient. Carefully define the scope of the process from the outset, to make sure that it is manageable. How detailed ToCs are ranges very widely. This is both acceptable and appropriate. It is not necessary to prepare a meticulous blueprint for absolutely every specified element. One way to manage the process is to develop an overall Theory of Change, identify the specific component parts that the agency would be prepared to actually develop a programme for, and then flesh out the details only for these parts that the organisation will pursue. For example, let’s say that your team is tasked with preparing a ToC for CCA, and your agency specialises in water/sanitation programmes. You could sketch out a broad vision of climate change adaptation, and then an accompanying one that is more detailed which focuses only on the water security component.

- **ToC approaches can be confusing to some,** and it is not uncommon for an end result diagram to be ‘messy’ and difficult to interpret (‘arrows going everywhere’). The approach can feel too abstract to those who are used to focusing on activities – including to local partners and community groups, especially when there are language or translation issues involved. It is not a helpful or empowering process if stakeholders end up befuddled and do not understand the programme model itself.

  **Recommendation:** The process is more likely to be successful if it is introduced in stepwise fashion, and aided by a facilitator who is experienced in ToC approaches. There are a number of specialist agencies that can be contracted to help guide your organisation through the process. It may also be necessary for a person or small team to ‘clean up’ and streamline an over-crowded diagram so that it is attractive and more easily understood.

- **ToC can run the risk of becoming a “glorified logframe”** (James 2011: 10), “jumping through a hoop” (James 2011: 17) or an imposed donor requirement rather than a vehicle for social change. Some have also noted logic models were originally formulated to spur more reflective analysis than they are now associated with, and ToC could simply become another iteration of this (Vogel 2012b).

Recommendation: Care must be taken to do Theory of Change thoughtfully and well. A rushed, superficial exercise will probably not be meaningful nor lead to a better programme design. As O’Flynn (2012) asserted, “developing a Theory of Change is not a quick fix; rather it is a long-term change process” (p. 1).

- **ToCs can be too abstract.** While one of its key advantages is embedding a programme or portfolio within a ‘big picture analysis’, this can be taken too far. Some ToCs read more like a sequence of bold but vague vision statements that are not particularly ‘do-able’.

Recommendation: ToC nests near-term programming within a larger analysis. The key to doing this well is for each link to be as clear and practical as possible. It is especially important to pay attention to the intermediate outcomes, as these linkages weave divergent strands into a coherent whole. If the intermediate outcomes are vague, then the larger analysis will also be weak. Make an effort to ensure that these steps are concrete and lend themselves to action planning.

**Example: The Ecosystems Services for Poverty Alleviation (ESPA) Theory of Change**

ToC approaches for climate change adaptation are fairly new, and published documents tend to present the design of a programme, rather than how it has been used to evaluate it. Those looking for a clear but concise ‘real world’ example that is pertinent to CCA may be especially interested in the ESPA (2012) paper which presents their theory of change model. This paper offers a short introduction to a Theory of Change, together with well-written narratives and short ‘summary’ illustrations like Figure 3 below.

**Figure 3: Simplified summary of ESPA’s ToC. Derived from ESPA 2012: 3.**

- **World-class research & evidence on ecosystems services & poverty alleviation**
- **Platforms for knowledge exchange, dialogue & learning on ecosystems services & poverty alleviation established**
- **Demand for ESPA research stimulated through networking, relationships, alliances & partnerships**
- **New evidence products, pilot technologies, management methods & application frameworks for ecosystems services & poverty alleviation co-produced to meet research users’ needs... so that...**

- **In the short term, immediate users in the science, policy, business & local communities**
- **Become aware of, & understand ESPA research evidence through learning by doing & knowledge brokering**
- **Become receptive to viewing ecosystems services as key to poverty alleviation... so that...**

- **In the medium term, international & national actors in policy, planning & implementation, working on ecosystems, environmental issues, climate change, livelihoods, growth & governance**
- **Validate ESPA research & applications through knowledge communities at local, national & international levels**
- **Recognise that managing ecosystems services for poverty reduction & growth is a major new development intervention**
- **Demand evidence to support effective implementation of ecosystems services development strategies... so that...**

- **In the long-term, people communities & development actors are able to sustainably manage ecosystems for poverty reduction & growth**

ESPA’s outputs

Receptiveness

Sustained demand for evidence

Ecosystems sustainably managed
The supporting materials help reader interpret the full model, which is reproduced in Figure 4 below.

Figure 4: ESPA ToC model.
The authors do an excellent job of communicating a complex conceptual model in a way that can be easily grasped by others. One can also see how the agency has used this approach to clearly link a fairly narrow niche of programming – research on ecosystems and poverty alleviation – to a broad vision of transformative change via the specified stepping stones (see Figure 4, previous page). The authors also deftly select which components need to be distilled into a summary, and which need further elaboration. It is an excellent example for others to learn from.

Conclusion

In this Guidance Note, we have sketched out the background of the Theory of Change (ToC) approach and how it can be applied to climate change adaptation programme design, monitoring, and evaluation. ToC is now being used more and more widely, both as a substitute and as a complement to more familiar logic models. Many experts now recommend using Theory of Change for climate change adaptation, because the method helps ground near-term endeavours within a larger but flexible vision of transformative change. In addition, it is an approach that makes clear linkages between projects, programmes, and portfolios. This is an essential characteristic if adaptation interventions are to exploit synergies rather than risk maladaptation (i.e., projects which are meant to promote adaptation but inadvertently cause harm in the long run). Although some associate it as a programme design tool, it also offers important advantages for evaluation research itself, including grounding evaluations within larger strategic analysis; identifying an agency’s overall contributions to larger change and broader lessons learned; and more judicious and contextualised use of indicators, thresholds, and assumptions. While there is no fixed method, common ToC elements include an overall long-term goal; and then ‘backwards mapping’ a pathway of clear steps (intermediate outcomes) that would lead toward it; together with clearly-articulated indicators, thresholds, and assumptions. We have presented an outline of tasks for a team to follow, together with both a hypothetical example and a pertinent case study. Together, these illustrate how Theory of Change is well-suited for the complexities inherent in climate change adaptation programming, insofar as it flexibly but rigorously bridges sectors, scales, timeframes in a way that links current projects to a larger strategy.

References and recommended reading


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