Theory of Change

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UNICEF OFFICE OF RESEARCH

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1. THEORY OF CHANGE: A BRIEF DESCRIPTION

A ‘theory of change’ explains how activities are understood to produce a series of results that contribute to achieving the final intended impacts. It can be developed for any level of intervention – an event, a project, a programme, a policy, a strategy or an organization.

A theory of change can be developed for an intervention:

- where objectives and activities can be identified and tightly planned beforehand, or
- that changes and adapts in response to emerging issues and to decisions made by partners and other stakeholders.

Sometimes the term is used generally to refer to any version of this process, including a results chain, which shows a series of boxes from inputs to outputs, outcomes and impacts (see figure 1), or a logframe, which represents the same information in a matrix.

Figure 1. Schematic depiction of a theory of change, Peer Review Group meeting

Figure 2. Theory of change for multi-country evaluation on increasing access and equity in early childhood education

Other times it is used to refer to specific types of representations – especially those that provide more detail about different levels of change, different actors and different causal pathways (see figure 2). Sometimes these representations show the contextual factors that help or hinder this change, and the assumptions on which it is built (conditions which are necessary for it to work but which are not under the control of implementers).

This brief discusses the concept of theory of change in the broader sense of the term, while recognizing that it is sometimes defined more narrowly.

A theory of change can be used for strategic planning or programme/policy planning to identify the current situation (in terms of needs and opportunities), the intended situation and what needs to be done to move from one to the other. This can help to design more realistic goals, clarify accountabilities and establish a common understanding of the strategies to be used to achieve the goals.

For example, the UNICEF Strategic Plan 2014–2017 is based on a theory of change that builds on UNICEF’s comparative advantages, and encompasses identifying and scaling up effective technological, scientific and programmatic innovations; improving organizational capacity for the implementation of policies and national laws; developing the capacities of children, families and communities to act as agents of change; and working in national and global partnerships.

A theory of change can also be used during implementation to identify which indicators must be monitored, and to explain to staff, funders and partners how the programme or policy works.
In an impact evaluation, a theory of change is useful for identifying the data that need to be collected and how they should be analysed. It can also provide a framework for reporting.

Developing a theory of change is not simply a matter of filling in boxes; it is important to ensure that the theory of change adequately represents what the intervention intends to achieve and how – to the satisfaction of those who will use it. Ideally, a theory of change explains how change is understood to come about, rather than simply linking activities to expected results with an arrow.

Main points

1. A theory of change explains how activities are understood to contribute to a series of results that produce the final intended impacts.
2. There are different ways of developing and representing a theory of change.
3. In an impact evaluation, the existing theory of change should be reviewed and revised as needed to guide data collection, analysis and reporting.

2. WHEN IS IT APPROPRIATE TO USE A THEORY OF CHANGE?

A theory of change is a building block for impact evaluations and should be used in some form in every impact evaluation. It is particularly useful when the intention is to learn from an impact evaluation conducted at one site and then apply these lessons to another site.

When planning an impact evaluation and developing the terms of reference, any existing theory of change for the programme or policy should be reviewed for appropriateness, comprehensiveness and accuracy, and revised as necessary. It should continue to be revised over the course of the evaluation should either the intervention itself or the understanding of how it works – or is intended to work – change.

3. HOW TO DEVELOP A THEORY OF CHANGE

A theory of change should begin with a good situation analysis. This involves identifying: the problem that the intervention seeks to address; the causes and consequences of this problem; and the opportunities, for example, synergies with other initiatives, or existing resources that can be leveraged or strengthened. Even in situations where the theory of change is being developed or significantly revised well after implementation has commenced, it is important to review the situation that gave rise to the intervention to ensure that the intervention is attempting to solve the right problem.

The next stage is to clarify which aspects of the problem the intervention will address, and to make explicit the outcomes and impacts that it seeks to produce.

When there is agreement about the current situation and the desired situation that the intervention is intended to contribute to producing, the next step is to develop a theory about how to get from the current situation to the desired situation. This should be in two parts – a theory about how this change will come about (e.g., deterrence) and a theory about how the intervention will trigger this change (e.g., drawing attention to gaps in service delivery by conducting surveys of availability and publishing the findings). This is illustrated in figure 3, which shows some theories about how change might come about and what the intervention might do to trigger each of these changes.
Theories about how change comes about and how the intervention can trigger the change

<table>
<thead>
<tr>
<th>Individual change: transformative change of a critical mass of individuals</th>
<th>Investment in individual change through training, personal transformation/ consciousness-raising workshops or processes; dialogues and encounter groups; trauma healing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health relationships and connections: break down isolation, polarization, division, prejudice and stereotypes between/among groups</td>
<td>Process of inter-group dialogue; networking; relationship building processes; joint efforts and practical programmes on substantive problems</td>
</tr>
<tr>
<td>Root causes/justice: address underlying issues of injustice, oppression/exploitation, threats to identity and security, and people’s sense of injury/victimization</td>
<td>Long-term campaigns for social and structural change; truth and reconciliation; changes in social institutions, laws, regulations and economic systems</td>
</tr>
<tr>
<td>Institutional development: establish stable/reliable social institutions that guarantee democracy, equity, justice and fair allocation of resources</td>
<td>New institutional and governance arrangements/entities; development of human rights, rule of law, anti-corruption; establishment of democratic/equitable economic structures; decentralization</td>
</tr>
<tr>
<td>Grass roots mobilization: mobilizing the community so that politicians have to pay attention</td>
<td>Mobilize grass roots groups, non-violent direct action campaigns, use of the media, education/mobilization efforts, advocacy groups</td>
</tr>
</tbody>
</table>


A theory of change should ideally draw upon a combination of information and processes, including:

- needs assessment or determinant analysis that identifies what must be in place for success
- documented objectives
- previous evaluations and research on similar programmes or policies, particularly those that include analysis of how the programmes/policies work
- expert opinion on these types of programmes/policies
- perspectives of staff, managers, partners and community members about how (not whether or not) the intervention works, or fails to work
- feedback from relevant stakeholders on draft versions of the theory of change
- research-based theories about how change occurs.

In many cases, it is helpful to draw on theories from research to inform the development of the theory of change. For example, an evaluation conducted in Africa – which examined the impacts of capacity development on institutionalization, emergency preparedness and response, and disaster risk reduction in
the education sector\textsuperscript{1} – identified four different research-based theories to inform the evaluation. Lewin’s three-stage model of change\textsuperscript{2} focuses on the driving forces that facilitate or hinder change, and how those involved in the change agree that the change is necessary, collaborate towards the desired result and ensure the support of the relevant leadership. Lippitt’s phases of change theory\textsuperscript{3} sets out seven phases of change that are brought about by a change agent. Prochaska and DiClemente’s change theory\textsuperscript{4} identifies the different stages of change, including the maintenance of the change, and acknowledging that change often involves failures and restarts, and that different activities are needed at each stage. Social cognitive theory\textsuperscript{5} identifies different elements required to learn to behave differently: observational learning/modeling, outcome expectations, self-efficacy, goal setting and self-regulation.

In evaluations that have a long time frame, and where there has previously been an insubstantial theory of change, it could be appropriate to commit more time and budget to this process, including by convening stakeholders to review and revise draft versions.

In evaluations that have a short time frame and a small budget, the process of developing and using the theory of change should be incorporated into all stages of the evaluation. The evaluation team should review and revise the theory of change as part of an inception report for the evaluation – including using it as a source for reviewing the evaluation questions, and developing or reviewing the planned research design and methods of data collection and analysis – and then use it as a conceptual framework for analysing and reporting the data.

In some evaluations, where there is considerable existing knowledge about how the particular interventions work, and where the intervention does not need to change and adapt during implementation, it will be possible to set out a ‘road map’ in advance, and then use this as a reference point for the evaluation. Some interventions cannot be fully planned in advance, however – for example, programmes in settings where implementation has to respond to emerging barriers and opportunities such as to support the development of legislation in a volatile political environment. In such cases, different strategies will be needed to develop and use a theory of change for impact evaluation.\textsuperscript{6} For some interventions, it may be possible to document the emerging theory of change as different strategies are trialled and adapted or replaced. In other cases, there may be a high-level theory of how change will come about (e.g., through the provision of incentives) and also an emerging theory about what has to be done in a particular setting to bring this about. Elsewhere, its fundamental basis may revolve around adaptive learning, in which case the theory of change should focus on articulating how the various actors gather and use information together to make ongoing improvements and adaptations.

\textsuperscript{1} The Post-war Reconstruction & Development Unit and the Institute of Effective Education, Building a Culture of Resilience: The final report of the evaluation of capacity development in, and its impact on institutionalization of, emergency preparedness and response (EPR) and disaster risk reduction (DRR) in the education sector in Eastern and Southern Africa Region, University of York, York, June 2012. See http://www.york.ac.uk/iee/assets/Building_a_culture_%20of_resilience_UNICEF_%20EvaluationReport.pdf.
\textsuperscript{2} Lewin, Kurt, Field Theory in Social Science: Selected theoretical papers, Harper & Row, New York, 1951.
4. **HOW TO USE A THEORY OF CHANGE FOR AN IMPACT EVALUATION**

A theory of change can support an impact evaluation in several ways. It can identify:

- specific evaluation questions, especially in relation to those elements of the theory of change for which there is no substantive evidence yet
- relevant variables that should be included in data collection
- intermediate outcomes that can be used as markers of success in situations where the impacts of interest will not occur during the time frame of the evaluation
- aspects of implementation that should be examined
- potentially relevant contextual factors that should be addressed in data collection and in analysis, to look for patterns.

A good theory of change explains how a programme or intervention is understood to work. For example, a programme that aimed to reduce the incidence of female genital mutilation/cutting (FGM/C) included meetings of community members. A good theory of change would show how these meetings were intended to contribute to the intended final results. Was it by providing new information to community members (e.g., regarding the health risks)? Was it by changing social norms (e.g., by providing new information about the changing incidence)? Or was it by creating opportunities for people to share strategies to overcome barriers (e.g., by sharing ideas for alternative ceremonies to mark the start of adulthood)? A good theory of change would also explain how the programme was expected to achieve its intended results of enhancing relevant legal and policy frameworks at the national and sub-national level. Would this be achieved through strengthening the capacity of key actors to coordinate action, through providing models for legal and policy frameworks, by supporting advocacy efforts, or through some other causal processes?

An impact evaluation can check for success along the causal chain and, if necessary, examine these alternative causal paths. For example, in a programme that provided capacity development to support the development of new policy frameworks, were the sessions delivered as intended? Was the material relevant and accessible? Were facilitators seen as credible? Failure to achieve these intermediate results might indicate implementation failure. The capacity development activities might have been implemented adequately, however – thus lack of capacity was not the barrier to developing new policies, rather it was the opposition of influential organizations. In this case, a failure to achieve the final intended impacts would be due to theory failure rather than implementation failure. This has important implications for the recommendations that come out of an evaluation. In cases of implementation failure, it is reasonable to recommend actions to improve the quality of implementation; in cases of theory failure, it is necessary to rethink the whole strategy for achieving impacts.

5. **ETHICAL ISSUES AND PRACTICAL LIMITATIONS**

Time is needed during the evaluation process to develop and use the theory of change. There are strategies to minimize how much time is required (see above). In programme areas where there has either been little previous research or evaluation undertaken, or it has not been synthesized into an accessible document, it can be useful to undertake a synthesis of existing knowledge – including input from relevant key informants – before beginning to develop a theory of change.

Ethical concerns may arise in regard to articulating the theory of change of certain advocacy interventions where the public disclosure of a strategy might allow opponents to undermine future efforts. In such a rare case, advice should be sought as to what level of detail ought to be disclosed.
6. WHICH OTHER METHODS WORK WELL WITH THIS ONE?

The development of a theory of change should ideally draw upon a combination of information and processes.

A theory of change can be used with any research design that aims to infer causality. For experimental and quasi-experimental designs (see Brief No. 7, Randomized Controlled Trials, and Brief No. 8, Quasi-experimental Design and Methods), it can identify important contextual variables that should be addressed when comparing treatment and comparison or control groups.

A theory of change can use a range of qualitative and quantitative data, and provide support for triangulating the data arising from a mixed methods evaluation.

7. PRESENTATION OF A THEORY OF CHANGE

There are different ways to present a theory of change.

A results chain (or pipeline model) represents the theory of change in terms of a series of boxes, as below.

Figure 4. Theory of change presented in a results chain

![Results Chain Diagram]

Sometimes multiple boxes are shown for each stage and the relevant boxes linked to show how particular activities lead to particular outputs, and how particular outputs lead to particular outcomes. An overly simple theory of change might show, for example, that the input of funding and materials, and the activities of producing and distributing a newsletter, will lead to increased knowledge, which will in turn lead to changed behaviours that contribute to better health. An intervention with a better theory of change would show multiple causal paths towards behaviour change, including influencing social norms, infrastructure development and individual motivation.

A good logframe presentation represents the theory of change in terms of a matrix, in which the stages in the chain are: overall objective; purpose (specific objective); and expected results and activities. For each of these stages, the logframe sets out the: intervention logic (a description of that change); objectively verifiable indicators of achievement; sources and means of verification; and assumptions.

An outcomes hierarchy shows many levels of intermediate results that lead to the final impacts. The theory of change shown in figure 5 not only shows how South Africa’s Child Support Grant\(^7\) might contribute to a range of positive impacts, but also identifies other contributing factors (such as the quality of health and education services) needed in order to achieve these.

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Figure 5. Theory of change for the Child Support Grant, South Africa


8. EXAMPLES OF GOOD PRACTICES

Example 1

The following example, from the joint evaluation of the UNFPA–UNICEF Joint Programme on Female Genital Mutilation/Cutting, shows how a theory of change can be improved during an evaluation, and also how it can be represented in different ways for different purposes.

The initial theory of change was developed ex ante, during the evaluation inception phase, and then revised during the evaluation as more data became available. The new version also revised the wording in

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the diagram to more clearly distinguish between the initial situation and the intended changes to the situation.

Figure 6. Detailed theory of change showing multiple causal paths and availability of supporting evidence

In addition, a simplified version of the diagram was developed and used in the evaluation report to focus more clearly on the sequence of changes that was understood to be involved in achieving the intended impacts, and especially to highlight where there remained gaps in the data.
A theory of change can be particularly useful for evaluating policy work as it identifies the intermediate outcomes and causal pathways needed to achieve the ultimate intended impacts; the evaluation can then seek to gather evidence about whether or not these have been or are likely to be achieved.

**Example 2**

The following example demonstrates the use of a theory of change to guide data collection and analysis – in particular, to explain programme failure – in the impact evaluation of the Bangladesh Integrated Nutrition Programme.9

This programme offered a weekly weighing of infants and then provided nutritional counselling and supplemental feeding to those identified as being malnourished or underweight. An impact evaluation involving propensity score matching (see Brief No. 8, Quasi-experimental Design and Methods) found no significant impact on nutritional status (although there was a positive impact on the most malnourished children).

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Figure 8. Theory of change for the Bangladesh Integrated Nutrition Programme

The evaluation tested many of the causal links in the theory of change and found that these were not occurring. Many of the individuals responsible for weighing the infants were unable to correctly interpret the weight charts and thus unable to correctly refer the children most in need to the programme. There was considerable leakage and substitution of the supplementary food. And, in many cases, the mothers who attended the programme, and received the nutritional counselling, were unable to implement the advice provided because of the influence of mothers-in-law. The theory of change was able to identify the variables that should be included in the evaluation and provide a framework for telling a coherent story about the situation.

9. EXAMPLES OF CHALLENGES

Although the concept of theory of change is widely used in impact evaluation, it is often used in ways that fail to capitalize on the advantages it can provide.

Failure to actually have a theory about how change occurs

Many logic models and logframes used in impact evaluation do not actually explain how a programme or policy is understood to work. The respective theories of change are inadequate to guide a comprehensive impact evaluation, and therefore the data collection, analysis and reporting are less useful than they might be.

Some impact evaluations fail to have any kind of theory of change at all, which makes it hard to build up a coherent understanding of the intervention and its results across the mass of data. It also makes it difficult to report and make sense of mismatches in triangulated data. For example, one evaluation reported that almost all schoolchildren had reported washing their hands after using the latrine, yet in another section it stated that few school or household latrines had handwashing facilities, and even fewer of these had water or soap/ash. This made the reported behaviour seem unlikely, but the report failed to combine these data to come to a conclusion about the credibility of the evidence. If the evaluation had had a theory of change, which identified knowledge, motivation and opportunity as three essential precursors to behavioural change, this could have helped to guide data collection and analysis, and the report would probably have
been able to conclude that the children had the knowledge but not the opportunity to change their behaviour.

**Gaps in the theory of change**

Other impact evaluations fail to address the important aspects of a theory of change. It is very often the case that an intervention will have multiple theories of change at different levels of the intervention. For example, a ‘train the trainer’ model will seek to improve teachers’ knowledge of different teaching methods so that they can teach children better and improve their own knowledge of subject areas. Different theories of change might be needed to explain how the intervention works directly with teachers compared to how those teachers will work with students. In upstream policy work, multiple theories of change will be needed to address the changes that are intended at different levels – for example, with staff, managers, policymakers and community organizations. Weak theories of change do not address each of the different levels of change.

Theories of change must also identify and address intermediate outcomes. For example, one UNICEF evaluation did not identify or address a key intermediate outcome – that relevant stakeholders were convinced of the success of the pilot project and of the feasibility for it to be scaled up. The evaluation therefore failed to collect any evidence about whether or not the pilot was seen as successful or appropriate for scaling up.

**Diagrams that fail to provide a coherent or adequate picture of the theory of change**

Many theory of change diagrams fail to communicate clearly. Some are too simplistic, omitting important elements and making it seem like the intervention will produce the intended impacts without the need for the support of a favourable implementation environment. Some are too complicated, having so many detailed boxes that it is impossible to get a coherent overview of the causal processes. Others are illogical, with boxes linked by an arrow that cannot be explained, or featuring an incoherent mix of positive and negative outcomes, for example, displaying the current problem situation in the final impact box rather than the intended changes.

**Failure to use the theory of change to guide data collection, analysis and reporting**

Some evaluations fail to systematically use the theory of change to identify relevant data to be collected or to guide analysis. For example, they do not identify intermediate outcomes, so data are not collected about them, and then if an intervention fails, it is not possible to identify where the causal chain broke. Or important aspects of implementation are not identified or addressed in data collection, so it is not possible to determine whether lack of results is due to implementation failure or theory failure – and if the intervention is successful, it is hard to know how to replicate or scale it up due to inadequate information about the features that make a difference.

**10. KEY READINGS AND LINKS**


‘Outcome Mapping Learning Community’, website, http://www.outcomemapping.ca/. (Website with many resources on outcome mapping, a particular form of theory of change that focuses on strategies to change the behaviour of intermediaries who then affect the intended impacts.)


# GLOSSARY

<table>
<thead>
<tr>
<th><strong>Conceptual framework</strong></th>
<th>A system of concepts, assumptions, expectations and theories that structures the research by identifying the research variables and their relationships. It assists with identifying the problem and framing the research questions. Related terms: theoretical framework.</th>
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<tbody>
<tr>
<td><strong>Impact</strong></td>
<td>Positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended. (OECD-DAC definition, 2010)</td>
</tr>
<tr>
<td><strong>Impact evaluation</strong></td>
<td>An evaluation that provides information about the impacts produced by an intervention. It can be undertaken of a programme or a policy, or upstream work—such as capacity building, policy advocacy and support for an enabling environment. It goes beyond looking only at goals and objectives to also examine unintended impacts. See: impact.</td>
</tr>
<tr>
<td><strong>Input</strong></td>
<td>The financial, human and material resources used in a programme or policy. For example, training materials produced.</td>
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<tr>
<td><strong>Outcome</strong></td>
<td>The likely or achieved short-term and medium-term effects of a programme or policy’s outputs, such as a change in vaccination levels or key behaviours.</td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>The immediate effects of programme/policy activities, or the direct products or deliverables of programme/policy activities. For example, the number of vaccines administered.</td>
</tr>
<tr>
<td><strong>Propensity score matching</strong></td>
<td>A quasi-experimental method which matches treatment individuals/households with similar comparison individuals/households, and subsequently calculates the average difference in the indicators of interest.</td>
</tr>
<tr>
<td><strong>Synthesis</strong></td>
<td>The review and summary of two or more research or evaluation studies with the objective of summarizing and linking the evidence related to a particular research question. Related terms: systematic review.</td>
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