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The Value of Theory of Change in Large-Scale Projects and Complex interventions

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Question

- What value does theory of change use have at the meta-programmatic level, comprising a range of interventions for large scale programmes?

    o Have ToC's been used as communication tools, as management tools or neither?

- Are there examples that illustrate how Theory of change can be used to pull together nested ToCs within a broader programme/large scale programme?

    o Are there examples of the effectiveness of using ToCs at the broader portfolio level in large scale programmes and how do these approaches improve programme outcomes? Are there specific examples to show where this is well done?

Contents

1. Summary

This rapid literature review concentrates on the role that theory of change plays at the programmatic level, and if there are examples that illustrate how theory of change can be used to pull together nested theories of change in large programmes comprising a portfolio of activities and interventions. A subsidiary component to the review was to see if there are documented examples on the effectiveness of theories of change in contributing to project outcomes.

Theory of change (ToC), including the use of nested theories of change, are a valuable method in the management of extensive projects with a portfolio of activities. They are valuable because they facilitate the tracking of projects' activities and outputs through breaking down complex projects into simpler components which then can be understood in relation to their individual activities and outputs, and how these contribute to the meta-level and the attainment of programme outcomes.

The literature was mostly from grey and donor sources, including published and unpublished papers and research reports of development, research and evaluation consultancies. To a lesser extent academic literature (journal articles) was used. However, the literature is weak on evidence and specific examples of the effectiveness on using theories of change at the broader programme level and how these improve programme outcomes.

The following are key points that emerge from this review:

- Theories of change are used either as a management tool, as a communication mechanism or both. Theories of change that are developed at the beginning of a project intervention are used mainly as a communication method to convey information about a project or programme, to a wider audience, including for example donors, beneficiaries and other external stakeholders.

- This rapid review indicated that most theories of change are used in the context of a project evaluation. Evaluations incorporating theories of change can be at the baseline stage of the project, at the midway point or at the end of a project cycle or, undertaken at two or three stages of a project cycle.

- In most instances, theories of change are formulated to determine how change has happened already (*ex-post case*), rather than as a predictive model indicating how it is meant to happen (*ex-ante* orientation). Ex-post theories of change are usually developed as part of a separate evaluation phase of a project.

- When theories of change are used as a predictive model, this is a design strategy component utilised to develop a project/or programme's constituent parts at the outset to identify important outcomes and how to achieve and track their implementation.

- In large scale and complex evaluations spanning many years, the development of ToCs, after the project has already begun, would nevertheless be useful because there would be sufficient time to adjust the activities of a project, its outputs, objectives and outcomes as the project is implemented.

- The use of theory of change thinking in project management is flexible. It can be applied in simple, complicated and complex project scenarios. Various approaches are used to apply it, including the use of adaptive project management principles and using a realist framework.

- The review suggests project/programme theory of change should not be a once-off exercise, but rather based on a constant learning cycle involving refinement to the ToC as the context of a programme changes.

- Theories of change and 'nested theories' are particularly useful as a management tool for complex projects because it enables a complex picture to be broken down into simpler and more practical/manageable sub-components for management and monitoring purposes.

- This rapid review highlighted that there is a paucity of examples of the effectiveness of theory of change in achieving project outcomes and objectives in large scale programmes. The review found no examples of where theory of change with an ex-ante orientation has resulted in the achievement of desired programme outcomes.

- Related to the previous point is that there is little published research or grey literature on *evaluations* of theory of change and their usefulness in achieving project outcomes.

2. The value of Theory of Change in large scale programmes at a portfolio level

The use of theory of change in the management of development projects has its origins in the 1970's with scholarship on social change and how development can be advanced. Theory of change also derives from the field of project evaluation from the 1960's onwards and is an aspect of programme theory (James, 2011, Vogel 2012). Programme theory describes the linkages between project inputs, activities and outcomes, and provides a narrative on how programmes are meant to work for evaluations of programme performance. There are two key concepts in evaluation theory. Whereas theory of change provides a picture of how a programme is meant to work at the macro/strategic or bigger-picture level, a logical framework focusses on specific pathways within a ToC. In a logical framework, only components directly connected to a programme are described. It includes the direct relationship between programme input (resources) activities, outputs and outcomes, leading to project impact.

A variety of organisations utilise ToCs, including Monitoring and Evaluation specialists; international charity organisations; bilateral and multilateral donor organisations; international development funds and foundations; academics working in research and development and those working in NGOs and development programmes (Vogel 2012).

Allied to the usefulness of theories of change for different types of organisations, Vogel (2012) identifies different types of ToCs:

- **Country, sector and/or policy-oriented theories**: these involve high level mapping of key drivers of change as well as contextual issues and examples of sequences and pathways of change, at country or policy-wide level.

- **Implementing agencies' theories of change**: these ToCs underpin a performance management system for programmes and support decision-making with detailed analyses of contexts, power relationships and networks of actors. A systems perspective is often developed in this type of ToC.

- **Causal maps**: these are developed by evaluators and their focus is to understand issues of effectiveness; different pathways and actors in an intervention and the wider change intended for beneficiaries from an intervention or programme.

James (2011) notes that, since the 1990's evaluators have struggled with evaluating more complex development interventions. Researchers, for example Rogers (2008), Barnes et.al (2004), Eoyang et al. (1998), identify pitfalls of using simplistic logic models with linear causal pathways to guide development interventions.

These challenges include:

- Risks in overstating causal attribution by ignoring other factors in the environment that may be influencing project outcomes.
- Goal displacement, where original targets are met even though this affects the attainment of actual goals for a project.
- Inflexibility of the model which assumes that the environment in which it operates is constant. This results in dysfunctional effects when this model is utilised in a complex adaptive system.
- Simple logic models are also more likely to use a single theory of change, rather than accommodating different stakeholder views about what should and can be achieved.

Rogers (2008) points out the use of theory of change in development programmes is most challenging when interventions have either complicated or complex aspects. Complicated aspects to projects/programmes are those where interventions are implemented though multiple agencies; where projects have multiple causal strands and or alternative causal strands. Interventions that have complex components are characterised as having iterative/evolving activities and feedback loops, are sensitive to context (where there are ripple effects that may impact on other activities in a system), etc.

Theory of change models can be used in two main ways in project interventions (Mayne and Johnson,2015, p. 415):

- As a predictive model indicating how change is meant to happen in an *ex-ante mode*
- To determine how change has happened *as an-ex-post case*

Mayne and Johnson (2015, p. 416) list the following uses of theory of change as a management tool:

- In designing/planning interventions;
- In managing interventions (designing monitoring systems and understanding implementation and managing adaptively and learning);
- In assessing interventions (designing methods, tools, research questions and reporting performance);
- In scaling interventions (entailing generalising to the theory, to other locations and for scaling up).

3. The value of Theory of Change in Complex Interventions

Vogel (2012) notes that theory of change thinking lends itself to working in complex programmes. In responding to programme complexity, development practitioners and evaluators have utilised a variety of methods in deploying theory of change. The use of linear and adaptive approaches

can be integrated into an intervention (Woodhill[1], date unknown). In large portfolio programmes, Stame (2004) and Weiss (1998) highlight that local level evaluations do not immediately inform evaluations of impact at the macro-level of the programme. Weiss (1998 cited in Rogers, 2008, p. 42) distinguishes between implementation theory and causal theory. Whereas at the macro-level, the programme may have an overall causal theory, specific sites or sub-programmes may have their own implementation theories. These sub-implementation theories are called 'nested theories' and are useful in complex, multidimensional and long-term projects. Nested theories help with the sequencing and staging of interventions and show how different parts of a complex intervention fit together to facilitate an effective monitoring and evaluation plan that identifies what information is needed for each sub-Theory of Change and when (Mayne and Johnson, 2015, p 414).

An adaptive management approach has been utilised by many researchers to facilitate flexibility in theory of change application. This entails revisiting theory of change as the on-the-ground context unfolds. Punton and Burge (2018) refer to a 'living theory of change' that can be adjusted according to different conditions. If changes to original plans can be justified and, if supported by sound processes, then these changes should be adopted (Vogel 2012).

Ladner (2015) summarises the conditions for which an adaptive/flexible programme approach may be used:

- For complex problems, where solutions are difficult to predict.
- Where activities, outputs and outcomes emerge over time through learning loops.
- Where a non-linear path emerges iteratively through an experimentation process.
- Where a programme design develops throughout implementation, based on new learning from ongoing analysis.
- Where the theory of change is adjusted throughout the programme implementation together with program strategies and outcomes.
- Where substantial adjustments to programme direction are expected over the lifespan of implementation.

An adaptive management approach incorporating a flexible theory of change is utilised in various parts of the world in complicated and complex contexts (whose characteristics are described above). It is frequently used as an approach in fragile, conflict and violence affected settings (FCVAS) characterised by a dynamic or unstable system and in programmes focussing on governance and service delivery issues. See for example the governance reform programme PERL in Nigeria, documented by Punton and Burge (2018) and in South East Asia, the Pyoe Pin programme, reported on by Green and Christie (2018).

A variation on the use of adaptive principles in the complex development projects is Problem Driven Iterative Adaption (PDIA), described in detail by Andrews et al. (2015). The method offers a bottom-up solution, where local actors identify home-grown solutions to local problems. Solutions to problems are refined through experimentation in a process of trial and error and, champions are identified across sectors and organisations to ensure that solutions/reforms are locally relevant, acceptable and viable. Through an iterative process, evaluators are able to

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[1] Draft working paper

"tease-out" a theory of change to establish which intervention/s work best in the specific context of a project (Brinkerhoff, 2018).

# 4. Examples that illustrate how Theory of Change can be used to pull together nested ToCs

Examples of the way macro level theories of change and nested theories of change are used synergistically to pull together large complex programmes with a portfolio of sub-programmes occur across a spectrum of interventions including, governance, civil society, agriculture and education. Some examples of the application of theories of change are provided below:

A Governance/accountability evaluation

Tembo (2012) describes how theories of change can be developed and utilised in a project implemented in six African countries with markedly different governance features to achieve the goals of a Citizen Voice and State Accountability (CV&A) programme in the Mwananchi Leh Wi Tok project (translated as: Let the Voices of Ordinary People be Heard).[2] In this project, it was envisaged that ToCs would be developed incrementally in a progressive learning cycle based on a series of reflections (retrospective learning analysis) on how the projects within the programme countries have progressed. At the macro level, the theory of change (or starting ToC) is based on previous project experiences undertaken originally by the Overseas Development Institute (ODI) conducted across a variety of country contexts. This 'starting theory' postulated that by supporting 'interlocutors' (these are influential people in society or game changers) in obtaining citizen engagement in citizen-state interaction, this would lead to strengthening citizen demand for good governance including accountability (Tembo, 2012, p. 6). In addition, three theory-based outcomes were formulated as necessary preconditions for getting interlocutors (change agents) to develop transformative relations between citizens and their governments. This is shown in Figure 1 (Tembo, 2012, p. 6).

Figure 1 Outcomes framework for Mwananchi ToC,
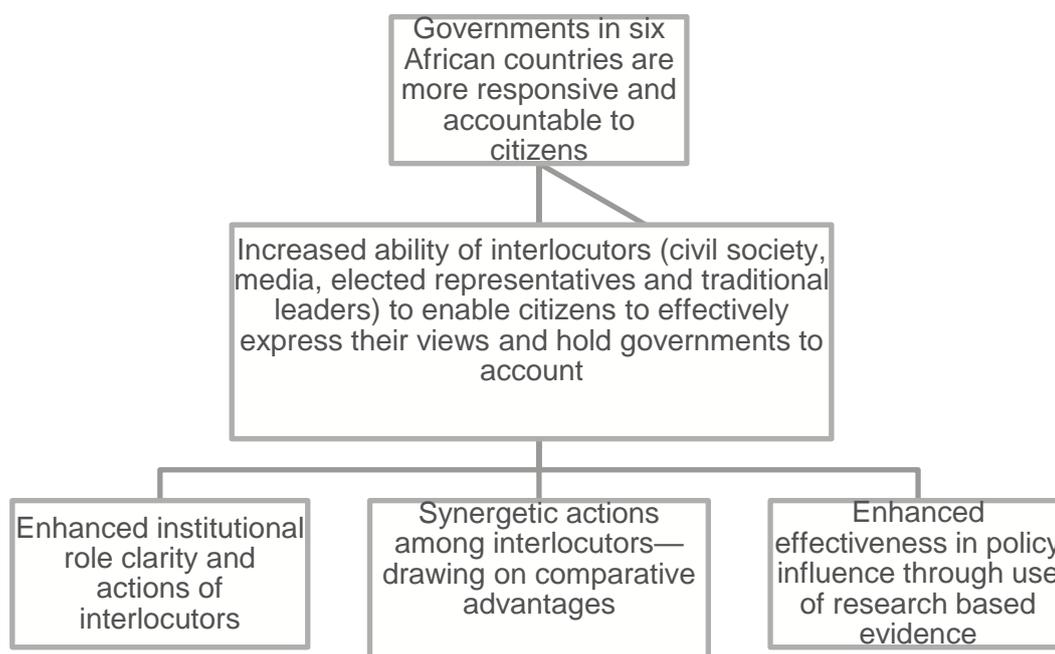
Source: Tembo, 2012, p6. © Overseas Development Institute 2012. Used with permission.

Understanding specific country contexts is a key component in the CV&A projects. Various methods can be used to understand contexts including a World Governance Assessment (WGA) methodology to explore in-country 'rules of the game' defining citizen state interactions; a Strategic Governance and Anti-corruption Assessment tool (SCAGA). A Political Economy analysis (PEA) and Outcome Mapping (OA) are data analysis methods to construct an analytic framework for developing ToCs, based on country-specific civic and governance dynamics. An ongoing action-learning cycle is envisaged to generate specific issue-based ToCs (Figure 2 below). This process leads to the deepening of ToCs at country/government level and improving results (Tembo, 2012, p 23).

Figure 2: Ongoing Learning Action Cycle
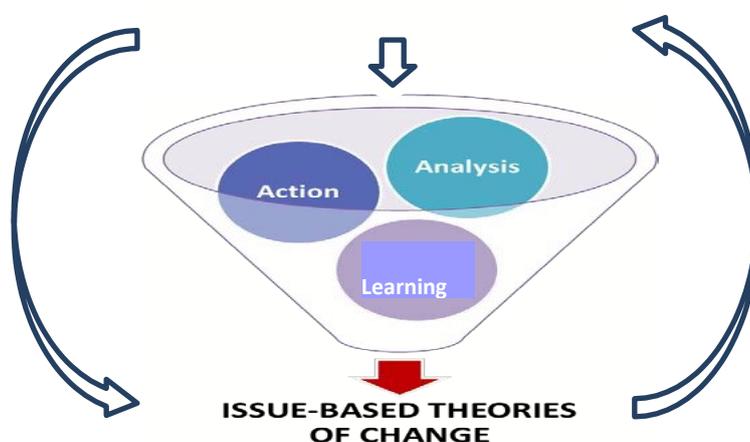
Source: Tembo, 2012, p24. © Overseas Development Institute 2012. Used with permission

Agriculture Health and Nutrition evaluation

Mayne and Johnson (2015) describe the important ways theories of change can be used in complex interventions in the CGIAR Research Program on Agriculture for Nutrition and Health (A4NH). This is one of 15 international agricultural research programmes on reducing rural poverty, improving human health and nutrition, and ensuring sustainable management of natural resources in developing countries.

See: Figure 3 Indicative Detailed Theory of Change for A4NH Interventions, source: Mayne and Johnson, 2015, p 413. https://journals.sagepub.com/doi/epub/10.1177/1356389015605198

Figure 3 is an example provided by the researchers on where nested ToC's could be developed (these are depicted in the solid ovals). The figure shows the way in which a complex intervention with several partners can be described. Nested theories are a technique to break down a more complex picture into something simpler and more practical. Mayne and Johnson note that at the top right of the figure, possible ToCs are shown to highlight how scaling up to community and the regional level are intended to work. The authors note that the large oval in the lower right of the figure shows the partially developed ToC aimed at improving the wellbeing of beneficiaries. Different versions of the same ToC, showing different levels of detail can also be presented for further simplification. Accompanying the diagrammatic representation should also be a narrative/text version describing how the intervention is meant to work.

Research capacity and sustainable development example

The Global Challenges Research Fund (GCRF) project was launched in 2015 as part of UK Aid. The aim of the programme is to build a global community of researchers that are committed to sustainable development and the eradication of poverty (Barr et.al, 2018). The portfolio of GCRF's underlying agenda is to support the achievement of the Sustainable Development Goals (SDG's), through 12 challenge areas, grouped into: sustainable development; sustainable economies and societies and human rights; good governance and social justice. From these themes, GCRF created six interlinked 'Challenge Portfolios': food systems, global health, resilience, conflict, education and sustainable cities (Barr et.al. 2018, p. 3).

Initially the GCRF had a simple theory of change that outlined some of the main steps in the Fund's intervention logic and was used as a communication tool. Consultants worked together with the GCRF stakeholders to develop a more detailed theory of change which would form the basis for evaluation of its programme (Barr, et.al., 2018).

A comprehensive ToC that underpins the performance management of the GCRF programme has subsequently been developed. The development of a more detailed theory of change had three main objectives:

- To undertake a systematic group-based ToC analysis with relevant stakeholders leading to a ToC that represents a shared 'world view' among all key stakeholders of the programme
- To develop a set of ToC products that document and communicate all elements of the theory in a meaningful way to ToC owners and stakeholders, for communication and evaluation purposes
- A process for reviewing and adjusting the ToCs based on evidence and learning

Barr et al. (2018) explain that the theory of change is structured around different 'spheres' of influence (direct and indirect) and the spheres explain the complexity of the GCRF's change processes and the extent of GCRF's ability to influence change at different levels. Each sphere illustrates the progression of interventions and outcomes, providing pathways to longer-term and wider-reach programme outcomes and impact.

In the GCRF programme, the development of the theory of change is not a one off activity, but a continual process of review and adjustment based on evidence and learning (Barr et al, 2018, p. B1, p. 24). The programme management comprised several phases:

- A Foundational phase: in which a detailed theory of change and strategy for the programme was developed.

- A process phase: where programme implementation is assessed particularly in terms of whether the programmes priorities are appropriate and targeted to meet objectives. Management practices and delivery mechanisms are also scrutinised.

- A Summative phase: an assessment of the outputs of the GCRF programme and if these outputs have contributed towards early stage outcomes.

- An impact evaluation, comprising the last stage: to determine if the programme has made a difference to the sustainable development and wellbeing of people in targeted developing countries.

Adjustments to the ToC will be based on its periodic review

using a range of information gathering methods suited to a Theory Based Evaluation, characterised by a causation framework. Methods could include (Barr, 2018, p. 62):

- **Case studies**: entailing a granular understanding of how processes are working within a real-world context.

- **Contribution analysis**: comprising a systematic way of developing and assessing the evidence for a theory of change and to assess the programme's contribution to observed outcomes and the extent to which it made a difference.

- **Process tracing**: entails establishing a causal link between a programme and an outcome by showing how the programme led to change. It entails collecting data on all steps between an intervention and an outcome.

- **A realist evaluation approach**: which aims to understand causal linkages between inputs and outcomes. It aims to understand the specific context, such as the conditions which facilitate an outcome.

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