October 2021

Defra Theory of Change (ToC) Tool

Final Report

October 2021

Defra Theory of Change (ToC) Tool

Final Report

Table of Contents

Figures

Executive Summary

Theory of Change is used across government departments and agencies to define and evidence public value, which is in line with the recent recommendations published by HM Treasury through the Public Value Framework (HMT, 2019) and with updated guidance on evaluation in government in the Magenta Book (HMT, 2020c).

However, policy evaluation in the Department for Environment, Food and Rural Affairs (Defra) faces particular challenges due to policies, programmes and strategies operating within and across natural environment, food and rural issues and through a complex landscape of interlinked economic, social and environmental systems.

Defra commissioned research partners Technopolis Ltd (project lead), the Centre for the Evaluation of Complexity Across the Nexus (CECAN) and Matthew Baumann Associates for this work to develop a Theory of Change (ToC) tool to support the evaluation of its complex policy remit. It has built on the development of the Defra Complexity Evaluation Framework (Defra, 2020) and departmental needs. The overall aim of the tool is to enable Defra policies, programmes and strategies to have more consistent and robust frameworks through which to understand and evidence impact and progress and to provide evidence against organisational outcomes as part of the delivery of the Public Value Framework approach.

Approach

Three main objectives were set for this work:

- Scope Defra's Theory of Change requirements and review literature and resources to understand existing approaches to Theory of Change and complexity.
- Co-develop understanding of Theory of Change and local needs and practical challenges with selection of Defra's policy / programme teams.
- Produce a practical Defra ToC tool for use by policy / programme teams and analytical leads across the department in developing robust, complexity-aware Theories of Change for evaluation and wider policy planning.

To deliver on these objectives, the fieldwork phase for this work centred on the delivery of four Theory of Change (ToC) workshops with Defra policy / programme teams and additional understanding gained through a strategic scoping and a review of existing literature and resources.

The scoping and ten semi-structured interviews with Defra strategic stakeholders (six interviews) and each of the four ToC workshop policy / programme teams (four interviews) provided context as well as detail on the strategic needs for a ToC tool. A Rapid Evidence Review[1] looked at existing literature and guidance on Theories of Change and complexity-aware evaluation. The practical Theory of Change-based

[1] The Rapid Evidence Review could perhaps be more accurately be described as a Quick Scoping Review, given the timescales that were set by the project. However, it built upon a recent Rapid Evidence Review on a similar topic (for the Complexity Evaluation Framework (Defra, 2020)), so can still be considered reasonably comprehensive and systematic.

requirements of Defra teams and associated challenges were identified and assessed through a series of four ToC workshops.

A series of ToC tool drafts were developed and these were tested with Defra. Firstly, through a testing and feedback workshop with eight representatives drawn from Defra's central and policy teams with an interest in the ToC tool. Then through a survey of seven representatives from Defra's evaluation community of practice with experience of evaluation in Defra.

Insight from fieldwork and themes for the ToC tool

The scoping, review of literature and resources and the ToC workshops provided valuable insight on the use of Theory of Change in complex government policy / programme settings and on the requirements and needs for the development of the ToC tool. A number of broad considerations and implications for the ToC tool were seen across the following themes, based on the overall findings from the fieldwork:

- **Interconnected outcomes**: Defra teams often target multiple interconnected outcomes with multiple stakeholders involved in the delivery of policies / programmes. The fieldwork showed the ToC tool should consider and provide understanding (with clear and consistent definitions) of system characteristics and outcomes throughout a policy / programme, in both the short and longer-term. The ToC tool should also have the flexibility to break down a high-level Theory of Change into multiple manageable 'nested' components to capture how an intervention(s) is expected to work at different levels.
- **Multiple use cases and stakeholders**: A wide range of use cases for Theory of Change exist across Defra and these reflect the different requirements for granularity and emphasis from a Theory of Change as well as the time and resources available and the level of experience in Theory of Change. The fieldwork showed a ToC tool would need to have flexibility for a range of users with different Theory of Change requirements, levels of experience, time and resources (while at the same time having the facility to capture and understand how a range of stakeholders from a wider actor ecosystem fit into the delivery process and outcomes).
- **Adaption**: Defra's policies, programme and strategies operate in a complex domain and often with significant uncertainty and a changing dynamic. The fieldwork showed the ToC tool should provide not just a static 'snapshot' of a Theory of Change, but also the facility to consider change and uncertainty over time through reassessment and adjustment (including through facilitating a review and adaption culture for Theories of Change and evidence activities and incorporating the Complexity Evaluation Framework principles for complexity-aware evaluation management.
- **Collaborative development:** Discussing and developing a Theory of Change through a facilitated and collaborative approach is a valuable part of the Theory of Change process, as it can help enable different perspectives and stakeholder participation to be considered and brought together into a shared vision and articulation of outcomes. The fieldwork showed that the ToC tool should not just provide a Theory of Change 'product' but also support and facilitate discussion and collaboration during the Theory of Change development 'process', where quality conversations and the development of a narrative are key.

Development and structure of the ToC tool

The insight and findings from the fieldwork informed the tool's approach. The fieldwork and testing of the tool showed that it should have a clear and consistently defined structure, processes and definitions, that it should be accessible and applicable for different users and that it should be balanced against the demands of day-to-day work within Defra and often tight policy / programme development and delivery timescales. The approach used in the tool has also been informed by experience and insights gained from a Theory of Change approach developed previously.[2] The ToC map format and principles used in the tool attempt to address many of the challenges and shortcomings of Theory of Change approaches that were identified in the fieldwork scoping and the review of literature and resources and they align strongly with the challenges and complexities identified in the ToC workshops and the Complexity Evaluation Framework (i.e., Defra policy complexities and the identification of themes on interconnected outcomes and adaption).

The ToC tool has been developed within a step-by-step PowerPoint structure with built-in supporting guidance and the flexibility to support a range of Defra use cases. A separate set of editable templates and a summary pack have also been developed. The fieldwork also showed a potential need to translate the ToC map into a logic model for wider use within Defra (e.g., for a business case) and guidance and a template is provided in the tool for this.

The tool itself consists of three main parts within the PowerPoint-based structure: firstly, there is an introduction to the tool, which sets the scene and the approach; then a series of practical steps develop the Theory of Change, through a two-phased collaborative process that develops and then challenges and strengthens the Theory of Change; and, then a series of sections on using the Theory of Change, with guidance on visualising, documenting and using it in policy evaluation.

Limitations

Limitations were identified during the development of the ToC tool, based on the fieldwork that underpinned the tool. These include: the number of scoping interviews was limited and therefore not fully inclusive of Defra's context (and needs) for a ToC tool; the RER process, by definition, was not as rigorous as a full literature review approach (see also framing footnote above); and, the sample of four ToC workshop policy / programme teams would not have captured all of the detail for the tool to be fully representative of the practical needs, challenges and potential uses for Theory of Change across Defra.

Further work could build on this by engaging with a broader range of strategic and policy team stakeholders across Defra to develop the ToC tool further and update it. The integration of example Theories of Change, developed through use of the tool and anchored to specific use cases would also help refine and develop the tool further and demonstrate its applicability and functionality to users.

---

[2] A Theory of Change approach (BEIS, 2020) was developed by Matthew Baumann, Alex Mason, and Jane Walker during 2014-2015 for the Department of Energy & Climate Change (now Department for Business, Energy & Industrial Strategy).

1 Introduction

This paper presents an overview of the methods used and findings from the Department for Environment Food and Rural Affairs (Defra) ToC tool project.[3]

Defra commissioned research partners Technopolis Ltd (project lead), the Centre for the Evaluation of Complexity Across the Nexus (CECAN) and Matthew Baumann Associates to research and develop a practical, complexity-aware ToC (Theory of Change) tool for use across Defra policies, programmes and strategies to support policy development and evaluation and for further enhancing the evidencing of public value.

1.1 Background

Government departments and agencies use Theory of Change in policy development and evaluation to understand and set out how outcomes have been achieved and as an enabler of the evidencing of public value. The recently updated HM Treasury Magenta Book guidance for government evaluation (HMT, 2020c) which '*provides guidance on evaluation in government: its scoping, design, conduct, use and dissemination as well as the capabilities required of government evaluators'* includes particular emphasis on the use of Theory of Change and how this should be seen as a key step in evaluation.

Across government, the use of Theory of Change is in keeping with the findings of the Barber Review (Barber, 2017) on transparency and delivery of public value, and the recommendations in the Public Value Framework (HMT, 2019), designed to enhance the process behind government policy development and spending decisions. Implementation of the Public Value Framework has placed a renewed focus on outcomes and tying of departmental spending and performance more closely together. Furthermore, an Evaluation Task Force (ETF) was announced in the 2020 Spending Review to deliver a step-change in evaluation and to help enable evidence and evaluation to sit at the heart of spending and operational decisions (HMT, 2020a).

Defra's policies, programmes and strategies operate across natural environment, food and rural issues within a complex landscape of interlinked economic, social and environmental systems. The uncertainty, timings and variety of interactions within these systems, which can be adaptive, unpredictable, and non-linear (Boyd, 2015), poses a significant challenge for evaluation and the determination of attribution and evidencing of outcomes and public value. Also, as Defra has been one of the departments most directly affected by EU exit (NAO, 2017), policy changes and delivering on ongoing policy objectives, such as the 25 Year Environment Plan (Defra, 2019a), require specific and broad-ranging evaluation activities that take into account complexity across the policy cycle.

The recently updated HM Treasury Magenta Book guidance for government evaluation contains an annex on handling complexity in policy evaluation (HMT, 2020c). This supplementary annex provides guidance on complexity-based thinking and sets out the features of complex systems and methodologies and tools to

[3] The ToC tool is based in a separate set of PowerPoint slide packs.

support policymakers across government. System-based approaches for considering complexity has been identified by Defra as being valuable for considering challenges in its complex environmental policy remit. In recent years, a Systems Research Programme has been established by Defra to help facilitate its policymaking and understanding of the interconnectedness of environmental issues (Defra & GOS, 2019). Defra has also commissioned a Complexity Evaluation Framework (CEF) to build on the potential of systemic approaches through the development of a toolkit to support the design, commissioning, management and dissemination of evaluation (Defra, 2020).

The renewed focus in government on outcomes and tying of departmental spending and performance more closely together (as part of implementing the Public Value Framework), along with the recommendations from the CEF and updated HM Treasury Magenta Book together highlight the relevance and applicability of Theory of Change in government (and particularly so for Defra's case) and need for complex systems thinking approaches and tools to support it.

1.2 Aim and objectives

Defra commissioned the development of a bespoke Theory of Change (ToC) tool to support Defra teams in the design and delivery of evaluation of complex policies. The overarching aim of the tool was specified as being to enable complex Defra policies, programmes and strategies to have robust frameworks through which to understand and evidence impact and progress, and to collect evidence against organisational outcomes, as part of the delivery of the Public Value Framework approach.

Three main objectives were set for this work with a set of framing questions: (source Defra ToC tool ITT):

Objective 1: Scope Defra's Theory of Change requirements and review literature and resources to understand existing approaches to Theories of Change and complexity.

- To what extent are there existing viable models for developing Theories of Change that handle complexity?
- To what extent do existing approaches and resources meet Defra's needs?
- What additional needs does Defra have for developing Theories of Change, and how should these be met?

Objective 2: Co-develop understanding of Theories of Change and local needs and practical challenges with a selection of Defra's policy and programme teams.

- What are the local policy needs and strategic requirements for Theories of Change?
- What are the practical challenges faced by Defra policy teams in developing Theories of Change and the development of evaluation and metrics?
- How can a ToC tool capture complex system dynamics and enable teams to monitor change over time?

Objective 3: Produce a practical Defra ToC tool for use by policy teams and analytical leads across the department in developing robust, complexity-aware Theories of Change for evaluation and wider policy planning.

- What evidence is there that this tool will effectively support the robust evaluation of complex policies and programmes across Defra?

- How is this tool best implemented to ensure policy and analytical buy-in?
- What guidance and support are required for teams to practically use and implement the final product?

1.3 Development and delivery of the ToC tool

A practical ToC tool, with integrated supporting step-by-step guidance and a separate template pack to enable Defra teams to generate robust and complexity sensitive Theories of Change for evaluation of programmes and strategies across Defra's complex policy remit was developed through this project.

To support the aims and objectives, a fieldwork phase has:

- Scoped the context and strategic and practical needs for a ToC tool (through a series of semi-structured interviews);
- Reviewed existing literature and guidance on Theories of Change and complexity aware evaluation (through a Rapid Evidence Review); and,
- Inductively assessed and incorporated the experience and needs of Defra teams, through a series of four Theory of Change (ToC) workshops with Defra teams.

The insight and understanding developed through the fieldwork phase were taken forward into the development of the ToC tool through a number of drafts, which were tested (and refined) through a feedback workshop and then a survey with Defra.

1.4 Structure of this report

This report provides an overview of the Defra ToC tool project and the ToC tool.

Chapter 2 sets out the approach used for the fieldwork and its scoping, review of literature and resources and series of ToC workshops held with Defra policy / programme teams to understand the key requirements and needs inductively.

The report is then structured to focus on each of the three main objectives.

Chapter 3 (Objective 1) discusses the scoping of Defra's Theory of Change requirements and the review of existing literature and resources on existing approaches to Theories of Change and complexity.

Chapter 4 (Objective 2) discusses the understanding gained through the ToC workshops on Defra's complex policy / programme areas and their practical Theory of Change and ToC tool needs and challenges.

Chapter 5 (Objective 3) discusses and sets out how the ToC tool has been developed to support Defra's teams in developing complexity-aware theories of change.

2 Approach used for fieldwork and ToC tool development

2.1 Overview

To understand and determine inductively how a ToC tool could most appropriately support the use of Theory of Change within Defra's complex policy remit, this project and its research centred around a series ToC workshops with Defra policy and programme teams. Understanding was further informed by a strategic scoping (through a set of interviews) alongside a review of literature and resources (through a Rapid Evidence Review). A series of tool drafts were then developed and tested at a feedback workshop with Defra and then a survey of representatives from Defra's evaluation community of practice.

The project consisted of three sequential work packages which were delivered in close collaboration with Defra's strategic Evaluation Team (SET). All fieldwork was undertaken online as it was delivered during CV-19 restrictions, in Spring 2021.

The following work packages were delivered:

- WP1. Inception
- WP2. Fieldwork
    - Strategic scoping and interviews
    - Review of literature and resources (Rapid Evidence Review)
    - ToC workshops (x4).
- WP3. Reporting
    - ToC tool development
    - Feedback workshop and survey.
    - Delivery of ToC tool and final report.

2.2 Fieldwork

2.2.1 Scoping

After working initially on the Inception phase (WP1) to understand the core requirement, content and needs of the project, a set of six semi-structured scoping interviews[4] with Defra strategic stakeholders enabled an understanding (through WP2) of the overall context and strategic value and needs for the ToC tool.

The interviews were targeted at Defra stakeholders with experience and expertise in embedding the Public Value Framework (HMT, 2019), the 25 Year Environment Plan (Defra, 2019a), performance reporting, and organisational change / improvement as well as Defra systems research (Defra & GOS, 2019). The interviews were semi-structured and were used to understand context and complexity challenges across Defra and the strategic needs for a Theory of Change-based tool. A number of broad context-based topics were explored during the interviews, including: the specific corporate, strategic and policy requirements Defra has on developing Theories of Change; the extent to which existing Theory of Change

[4] A topic guide was developed for these interviews, which were not recorded. A coding framework was not developed (six 1hr interviews). The responses were analysed against the topic guide for any indicative themes and for a broader understanding of context and need.

approaches/resources meet Defra's needs; and, the type of structure, guidance, templates and support Defra policy/analytical teams would require to 'buy into' and implement a ToC tool.

The scoping also included a quick review and integration of documents of strategic relevance to a ToC tool. These included public and non-public domain documentation and detail on: Spending Review 2020 (e.g., HMT, 2020a; HMT, 2020b), the Public Value Framework (e.g., HMT, 2019), HMT Shared Outcomes Fund and the Complexity Evaluation Framework (Defra, 2020).

2.2.2 Rapid Evidence Review

A review of literature and resources, through a Rapid Evidence Review (RER)[5] undertaken alongside the scoping described above (through WP2), also informed the development of the ToC tool. The RER reviewed academic and grey literature on existing tools, reviews of programme theory approaches and wider literature on Theory of Change and complexity.

To maximise available research time and budget, it was important that the RER balanced its breadth and depth with feasibility (i.e., the RER 'process' was limited in how much detail it could uncover, but at the same time it needed to be sufficiently systematic and robust).

The RER built on the previous evidence review completed as part of developing the Complexity Evaluation Framework (CEF), and included a mix of theoretical and practical application of complexity thinking in evaluation and on the development of Theories of Change.

Figure 1 provides an overview of the RER process in diagrammatic form.

[5] The Rapid Evidence Review could perhaps be more accurately be described as a Quick Scoping Review, given the timescales that were set by the project. However, it built upon a previous, recent and more systematic Rapid Evidence Review on a similar topic (for the Complexity Evaluation Framework), so it can still be considered reasonably comprehensive.

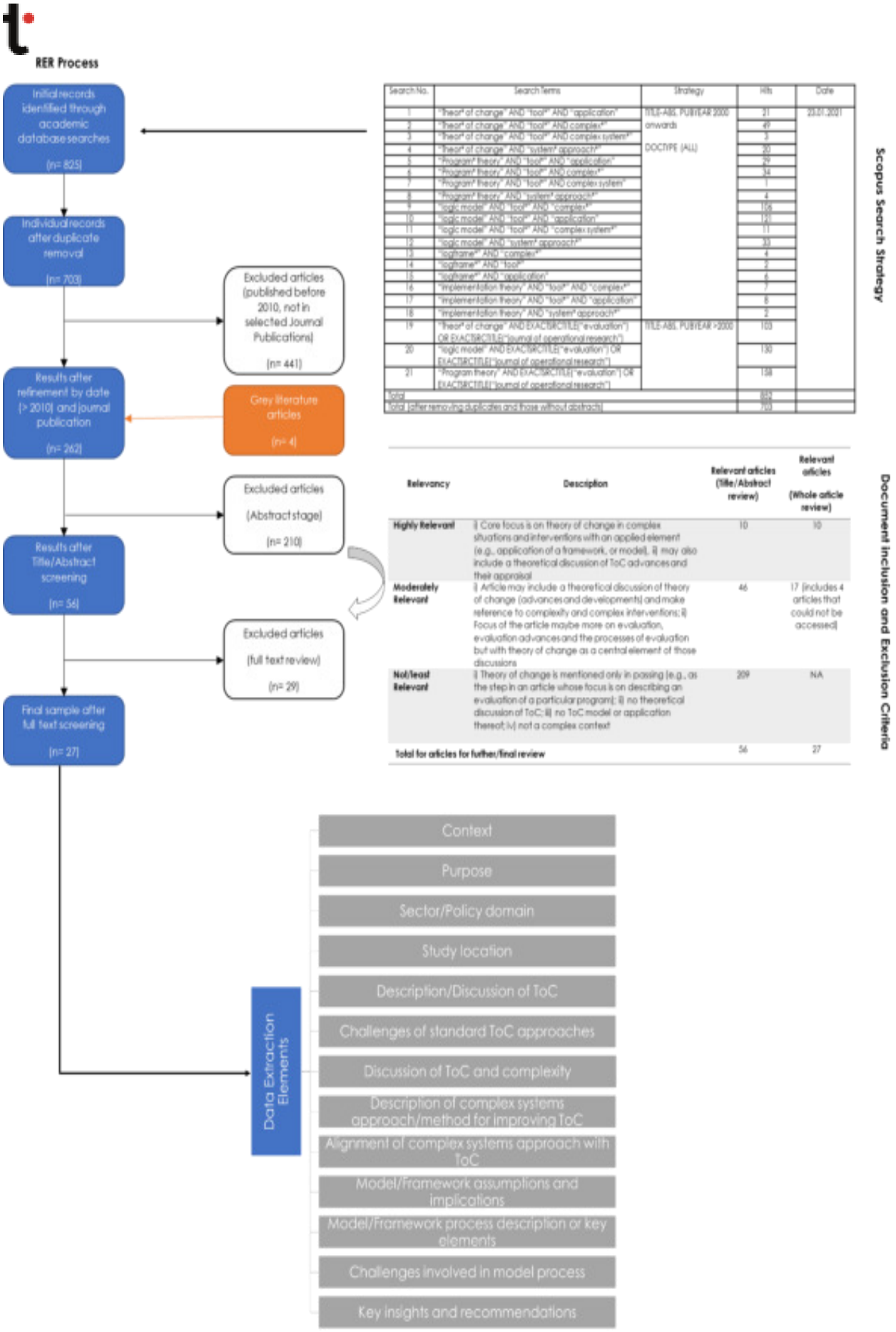

Figure 1. Composite of RER process.

2.2.3 Theory of Change (ToC) workshops

A series of four half-day ToC workshops were held separately with four different Defra policy / programme teams (through WP2). The purpose of each workshop was to inductively understand the requirement and needs for the ToC tool while supporting each team on developing a Theory of Change for their own particular policy / programme area.

Each of the four Defra policy / programme teams engaged with for the ToC workshops were selected to cover a broad range of different scenarios and experience levels for Theory of Change development. Each team had a focus on different policy / programme areas and strategic levels, and they were at different stages of Theory of Change development. The sample of four teams included: two teams with existing Theories of Change, with one of these at an early stage of developing their Theory of Change and the other requiring their Theory of Change to be updated and with a further consideration of system dynamics; and, two teams seeking to develop a new Theory of Change for their policy / programme areas, building from policy aims or existing outcomes frameworks. Each team had a practical need to develop a Theory of Change within a complex policy / programme context. Around eight to ten participants (policy and analytical specialists) attended each workshop, with a broad blend of different prior experience and understanding of Theory of Change and complexity concepts.

Each ToC workshop had an interactive online format, using Miro and its whiteboard and 'sticky note' functionality to run through key Theory of Change and complexity foundation concepts and to work up / refine a Theory of Change, maps and explore the needs for the ToC tool.

The delivery of each ToC workshop was based on three sequential steps, which followed an initial design session (see Figure 2).

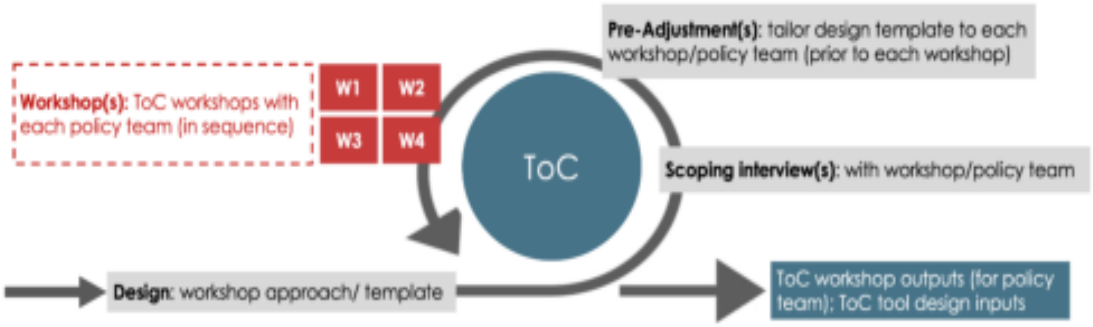

Figure 2. ToC tool workshops (source: Technopolis Ltd).

Design session: A half-day ToC workshop design session was used to set up a base template for the four workshops. A 'shell-based' layered structure was developed, consisting of: an 'inner shell' core Theory of Change work session (for each policy / programme team's Theory of Change); a 'middle shell' complexity reflection session; and a 'outer shell' ToC tool reflection session. The template was adapted specifically for this work and facilitated for each workshop session and team by Dr Paul Brand and Dr Helen Wilkinson (Risk Solutions).

Workshop scoping interview: Four semi-structured interviews[6] were held with representatives (up to three in each instance) from each of the four Defra policy / programme teams participating in the ToC workshops, to understand their particular policy / programme area and the extent to which they had experience in the use of Theory of Change and other tools.

Pre-adjustment session: Four 2hr pre-adjustment sessions were held to build on each of the four workshop scoping interviews (and shortly before each ToC workshop) with three to five representatives from each policy / programme team. These sessions aligned the workshop design template to the specific focus and needs of each workshop (which included: revisiting and interrogating existing Theories of Change, refining assumptions and thinking how the policy / programme fits within other initiatives and policies that are occurring simultaneously; and, introducing a non-linear map format, to help teams to more effectively consider and capture complexity elements in a Theory of Change). A workshop agenda with a series of objectives / tasks was agreed with each team during each pre-adjustment session.

Workshop session: Four half-day facilitated ToC workshop sessions were held with the policy / programme teams (with eight to ten participants in each instance) using the agenda and tailored design template from the pre-adjustment session. Each workshop included a set of specific tasks and objectives within a flexible framework to work directly on each teams' Theory of Change, before reflecting on complexity and on the ToC tool (i.e., by asking participants to consider and discuss what an effective Defra ToC tool would have / would not have). Emergent findings and direction from each workshop were incorporated into subsequent workshops (through inductive learning from the delivery and use of a post-workshop survey with participants).

2.3 ToC tool development and testing process

The insight developed through the scoping, review of literature and resources and the four ToC workshops was assessed and findings were brought forward to develop a first draft 1 of the tool in the reporting phase as part of WP3 (see chapter 5).

A group of eight representatives from Defra central and policy / programme teams (who were identified as having an interest in the ToC tool) were brought together to participate in a 2hr workshop, to gather feedback and to test draft 1 of the tool. The workshop participants had prior experience of the application of Theory of Change and provided initial reflections on the overall design / structure of the first draft (see chapter 5 for further discussion).

The tool was then developed into a second draft 2 and a final round of feedback and testing was provided through a survey of seven representatives from Defra's Evaluation Community of Practice (who were identified as having experience of evaluation in Defra and Theory of Change). Each survey respondent was provided with a short form with six open-ended questions (three of the seven respondents had previously been part of the ToC workshops). The respondents provided feedback on the following questions (see chapter 5 for further discussion): how useful and relevant

[6] A topic guide was developed for these interviews, which were not recorded. A coding framework was not developed (four 1hr interviews). The responses were analysed against the topic guide for any indicative themes and for a broad understanding of each team's policy / programme areas.

is the content in the tool overall?; which sections or parts of the tool are most useful and relevant?; are there any sections or parts that are not useful and relevant?; and, how easy is it to work through the tool and to understand and navigate the sections?

2.4 Limitations

Limitations were identified during the research for the ToC tool, based on the fieldwork that underpinned the tool.

The scoping interviews, which while in-depth and with a comprehensive topic guide, were based on a small number of respondents and therefore not able to be fully inclusive of Defra's context and needs for a ToC tool.

The Rapid Evidence Review process, by definition, was not as rigorous as a full literature review approach. While it needed to balance its breadth and depth with feasibility, it was limited in how much detail it could uncover.

The sample of four policy / programme teams—which included different policy areas as well as prior experience and expertise in Theory of Change—would not have captured all of the necessary detail for the tool to be fully representative of the practical needs, challenges and potential uses for the ToC tool across Defra.

While the above research-based limitations do limit, to a degree, the evidence base on which the tool has been developed and therefore its present form, they do provide a sufficient grounding and appropriate version 1 of the tool.

3 Scoping Defra's Theory of Change requirements and review of existing literature and resources

This chapter responds to the project's Objective 1 (see chapter 1) and its requirement to *scope Defra's Theory of Change requirements and review literature and resources to understand existing approaches to Theories of Change and complexity*.

The strategic scoping and the review of literature and resources undertaken during the fieldwork (WP2) provided valuable insight: on the use of Theories of Change in Defra's complex government policy / programme setting; on the overall requirement and challenges for the development of the Defra ToC tool; and, on understanding broader existing approaches and challenges for developing Theories of Change and complexity awareness. The insight gained through these fieldwork processes and a set of findings are set out in the sections below.

3.1 Strategic scoping

The strategic scoping broadly considered the component of objective 1 that required an understanding to be developed of Defra's Theory of Change requirements and the extent to which existing approaches and resources are able to meet these requirements and the additional needs that Defra has for developing Theories of Change.

Interviews with Defra stakeholders with experience of embedding organisational change / improvement and performance reporting (as well as systems research) identified drivers and applications for using Theory of Change in Defra. The interviews also provided insight on the challenges associated with developing and applying Theory of Change in Defra's complex policy environment.

The scoping and interviews both reaffirmed the range of drivers for using Theory of Change in Defra, including the Public Value Framework (HMT, 2019) and the emphasis from Cabinet Office and HM Treasury on planning and accounting for outcomes, such as in the recent Spending Review (HMT, 2020a; HMT, 2020b).

Defra teams most likely to be familiar with Theory of Change at a policy level were described by one of the interviewees as those areas where a strategy has already been developed. Clearly, there will be a range of experience in the development and application of Theory of Change across Defra teams and the ToC tool would need to provide for this in its design and approach.

The **need for a tool that is able to fit with the reality of day-to-day work across Defra's complex policy remit** was highlighted during the interviews, with one interviewee noting that while the drivers (outlined above) provide a significant stimulus for engaging fully with Theory of Change, the ToC tool would need to be able to fit in with the pace of policy work and organisational business within Defra. This has implications for the ToC tool, in the sense of the time and resource that different users would have to engage with it and need for a tool that is able to provide for a range of different use cases.

The **wide range of potential Theory of Change 'users' across Defra with differing contextual requirements and needs for granularity and emphasis** was also highlighted by the majority of interview respondents. For example, central teams in

Defra need an understanding of relatively high-level interdependencies between different goal areas and outcomes, and a way of determining which indicators will provide the most useful data on performance. Whereas policy teams (and evaluators) on the other hand need a Theory of Change process that goes into the detail of their policies and programmes or strategies as well as something that also can represent their policy neatly in business cases and spending proposals. This also has implications for the ToC tool with different use cases having their own specific context and requirements for applying the tool.

In addition to the points described above, particular challenges for developing and applying Theory of Change in Defra's complex policy environment were raised by each interviewee, with implications for the design and structuring of the ToC tool and its underlying approach to developing Theories of Change. These are summarised below.

- The focus of Theories of Change should have an **outcomes perspective**, considerate of the emphasis on key outcomes across multiple policies (and there is the need to think short and long term for policy teams). This is **considerably more challenging than mapping a 'single programme'**.
- Defra policies often target **multiple interconnected outcomes with multiple stakeholders** involved in the delivery and / or who are affected. It will be important to understand the trade-offs between outcomes as part of early Theory of Change envisioning work.
- **Understanding the underlying causal paths in Defra's complex policy environment can be extremely challenging** and yet doing so will be a fundamental part of any complexity aware Theory of Change process. Theories of Change should have the capacity to show how outputs from different Defra policy areas contribute to the delivery of a policy. Account should be taken of evaluation approaches required to attribute the causal logic in these situations.
- The assumption of **adaptation** presents an important challenge for applying Theory of Change. Work to develop policies and implementation, to develop Theories of Change and to plan monitoring and evaluation around them can be painstaking. But the assumption (if accepted) is that policy and delivery will need to be adapted, often regularly, in light of changing context, priorities, trade off reassessments and / or system responses. There will need to be a **continuous reassessment** of the Theory of Change so that as priorities change and new threats or opportunities arise the policy, the Theory of Change and the monitoring and evaluation can be adjusted.

The understanding highlighted above was assessed and taken forward into the development of the tool alongside the other fieldwork processes (see chapter 5).

3.2 Review of literature and resources

The review of literature and resources considered the component of objective 2 which required an understanding to be developed on existing approaches to Theories of Change and complexity within the overall context of Defra's complex policy / programme areas and requirements for the ToC tool.

Data was extracted from the final sample of included documents in the RER based on addressing Defra's overarching question of "To what extent are there existing viable models for developing Theories of Change that handle complexity" (see Figure 1). The extracted data was compiled into a codebook, with articles as rows and key data extraction components as columns. Information was then synthesised, through an inductive thematic process, across each column to generate meta-level insights.

The literature describes Theory of Change as **snapshots in time,** reflecting a particular point in the evolution of a programme or intervention; and a robust Theory of Change should **acknowledge uncertainty** and non-linearities (Mayne and Johnson, 2015; Mayne, 2015).

As such, Theories of Change are also described as **updateable models of change and learning**, which can vary over time and evolve as new detail comes to light and through a process of discussion-based analysis and learning (Vogel, 2012; Mayne and Johnson, 2015; Mayne, 2015). However, while considerate of detail and uncertainty, there is some consensus that to be useful, Theories of Change need to be **comprehensive, conveyable, and verifiable.**

Challenges with representing Theory of Change are also noted in the literature. With **no standard approach to Theory of Change** there is a proliferation of different practical interpretations and ways to develop and represent a Theory of Change (Mayne and Johnson, 2015; Mayne, 2017). Another challenge seen in the literature on the range of approaches to Theory of Change is that **Theory of Change diagrams are not always fit for purpose and can be overly relied upon** and that logic models that set out as stark box-and-wire diagrams with limited attention to narratives, explanations, and contexts can do more harm than good by not providing sufficient / necessary detail (Lankelly Chase, 2018; Lemire et al., 2018).

The literature also highlights that **while collaboration and stakeholder involvement in a Theory of Change is essential, it is not always straightforward** and that there can be challenges on reaching consensus with multiple perspectives and uncertainty in engagement (Bruner, Craig and Watson, 2019); Rolfe, 2019; Lam, 2020). Furthermore, there can also be **difficulty in characterising, expressing and verifying underlying programme assumptions** and Theory of Change can in some instances be 'under-developed' in the sense of not having sufficient detail and connection and they can have arbitrary assumptions (Archibald et al., 2016; Freer and Lemiere, 2019; Lam, 2020).

Theories of Change typically **lack properties to account for complexity and the complex nature of interventions**.[7] Although, the linkages between Theory of Change and complexity have been highlighted quite extensively in the literature, whereby **complex systems thinking can open up the black box of Theory of Change, whilst Theory of Change are useful for understanding complex interventions** (and noting

[7] Vogel, 2012; Arensman, van Waegeningh and van Wessel, 2017; Douthwaite and Hoffecker, 2017; Davies, 2018; Koleros and Mayne, 2018; Lankelly Chase, 2018; Ebenso et al., 2019; McConnell, 2019; Rolfe, 2019; Deane, Dutton and Bullen, 2020; Koleros et al., 2020; Lam, 2020; Wilkinson et al., 2021.

here that Theory of Change was originally developed to model and evaluate complex change initiatives).[8]

Theories of Change have been seen as **tools for scaling and adapting interventions and improving evaluations,** with some applications seen as an adaptive management tool to adjust programme trajectory (Mayne and Johnson, 2015; Douthwaite, Ahmad, and Shah, 2020).

Between half to two thirds of the RER documents identified provided insights and recommendations for either improving or enhancing the complexity capacity of Theories of Change or improving the implementation and practical application of complexity-informed Theories of Change. Common themes were then derived and distilled from these documentary comments to provide some overarching key messages and recommendations pertinent to the formulation and development of a complexity-informed and appropriate ToC tool.

- **Working with archetypes and a generic Theory of Change and having something to respond to can be helpful towards making the best use of time when teams have been brought together.** Preparation prior to a workshop and involvement of senior management at key points helps with buy-in. Build in on-going learning and reflection, not just carrying out a one-off workshop.
- **Theory of Change can be enhanced by being visualized as dynamic / interactive, with multiple pathways to results.** By varying the sizes, shapes, and colours of Theory of Change elements to portray differences in significance among activities, outputs, and outcomes. And by formatting arrows to specify the nature of connections. Colour coding can be particularly helpful for improving visualisation. Appropriate software should be used for drawing Theory of Change diagrams.
- **When developing a Theory of Change to analyse complex systems / initiatives that require the involvement of different stakeholders and perspectives, use terminology, definitions and elements that are understood by all the practitioners / stakeholders involved**. Reflecting on and sharing experiences of stakeholder engagement is important for future Theory of Change implementation. For example, include in all the evaluation processes people from the organization that are truly interested in identifying and critically reflecting on the assumptions in their programme logic. Added to that, involve a range of people, including leaders who can help to shape and sustain a process; field staff; and the target group.
- **Uncertainties in the Theory of Change, including knowledge of how best to plan for sustainability, should be made explicit**. Specific uncertainties include: the connections between the intervention and the rest of the system; the heterogeneities of actor needs; key barriers that individuals will face in the intended impact journey; programme resources are consistent with the resources required to make the impact journey; timelines of impact; the

[8] James, 2011; Mayne, 2015; Mayne and Johnson, 2015; Douthwaite and Hoffecker, 2017; Koleros and Mayne, 2018; Mayne, 2019; Rolfe, 2019; Koleros et al., 2020; Zarzueta et al., 2020.

dynamic support needed both during and post-funding stages to assist with capabilities, motivation, and opportunities. Represent the theory with validity and with simplicity, recognising that you cannot capture everything.

The key messages / recommendations summarised and highlighted above was assessed and taken forward into the development of the tool alongside the other fieldwork processes (see chapter 5).

4 Understanding Defra's complex policy / programme areas and their practical Theory of Change needs and challenges

This chapter responds to the project's Objective 2 (see chapter 1) and its requirement to *co-develop understanding of Theories of Change and local needs and practical challenges with a selection of Defra's policy / programme teams*.

As described in chapter 2, the four Defra teams engaged with during the fieldwork (WP2) in each of their four separate ToC workshops were selected to cover a range of different scenarios for Theory of Change development. They were each focussed on different Defra policy / programme areas and strategic levels and were at different stages of Theory of Change development. The four ToC workshops provided the opportunity for each of the Defra teams to provide practical input to the approach and development of the ToC tool and also for each Defra team to be provided with support on developing their own respective Theories of Change (during each workshop), which the research inductively learned from.

The understanding gained through each of the ToC workshops and findings from this are set out in the sections below, which discuss the local needs and strategic requirements for Theories of Change and the practical challenges faced by the teams in developing Theories of Change.

4.1.1 Workshop 1

The first ToC workshop focussed on a proposed Defra programme where, while a Theory of Change had been developed by the Defra team prior to the workshop, it had not fully considered the outputs. Also, there was a need for more detail on the short-term outcomes, assumptions and narrative. The workshop supported the team to refine the Theory of Change and to explore complexity and contextual elements.

A facilitated discussion during the workshop, where participants were asked to consider what an effective Defra ToC tool would have / would not have, provided reflections from the team relevant to the ToC tool. It was advocated that a tool should consider the needs of policy teams to interact and communicate policies and programmes in a clear way to multiple stakeholders. Another point that came through the discussion was the need to have clear and structured guidance on the most appropriate way to develop well informed and complexity-aware Theories of Change, and especially guidance that is considerate of the short timescales that Defra teams often have to operate within. The participants also highlighted that one of the biggest challenges faced would be limited time to conduct a reflective process in which complexity can be explored and integrated.

4.1.2 Workshop 2

The second ToC workshop focussed on an ongoing Defra programme where the team did not have an existing statement of Theory of Change. The objectives of the workshop were to support the participants in elaborating on the aims and objectives for the programme while developing an initial Theory of Change diagram and thinking about an evaluation framework. In addition, the workshop was seen as a good opportunity to support those participants without previous experience in developing and using Theory of Change (and to introduce the concepts and principles from the Complexity Evaluation Framework).

The facilitated discussion during the workshop on the ToC tool provided thinking and considerations from the participants relevant to the tool. The development of a Theory of Change 'from scratch' using an unfamiliar online platform (Miro in this case) and with participants unfamiliar with Theory of Change was found to be a challenging exercise. Delivery of the workshop found that even if a non-linear map is 'more appropriate' for capturing system complexity, it could be more helpful to use a linear approach initially, and particularly for introducing new concepts and when working in an online setting. The benefit of having a key Theory of Change person / champion who could support the drafting of an 'initial' Theory of Change before discussing it more widely in a group setting was also discussed. This could help enable an initial 'starting point' to be facilitated and developed within a small group and on which a wider team could then build upon.

4.1.3 Workshop 3

The third ToC workshop was based on a Defra programme scheme, which rather than having an existing Theory of Change, had developed an outcomes framework that included detail on the scheme's outcomes, inputs, and activities. To develop the outcomes framework into a Theory of Change, and to introduce complexity thinking, the workshop drew upon learnings from the first and second ToC workshops, including not just workshop process-based learnings but also on introducing complexity concepts and the principles of the Complexity Evaluation Framework within an online Defra policy / programme team setting.

The facilitated discussion during the workshop provided reflections relevant to the ToC tool. Firstly, that a tool could add value by providing a common language for the development of a Theory of Change across a team (and for the consideration of complexity). The participants also emphasised (from the tasks they had undertaken during the workshop) a need to have clear definitions of how outcomes, inputs and activities are conceptualised in Theory of Change (and within a complexity-based approach). Also, a discussion on developing different levels of Theories of Change highlighted that a ToC tool should provide guidance on the different contexts and modes in which Theory of Change can be used, and that Defra policy / programme teams would need to be clear about the end goal of their ToC during the development process. A discussion on the value of multiple Theories of Change also suggested that there may sometimes be a need for Defra teams to have more than one Theory of Change for each policy / programme and project, and therefore a ToC tool that supports and provides guidance on nested Theories of Change.

4.1.4 Workshop 4

The final ToC workshop looked at a collaborative programme led by Defra and an Other Government Department. The objectives of the workshop were to revisit and interrogate an existing Theory of Change, test the assumptions and think about context, system dynamics and fit with other initiatives occurring simultaneously.

The facilitated discussion during the workshop, where participants were asked to consider what an effective Defra ToC tool would have / would not have, provided reflections from the team relevant to the tool. It was identified by the participants that an 'ideal' tool should help policy teams to articulate realistic outcomes and to manage expectation(s), while allowing them to think about where their policy / programme fits in a wider context and system (i.e., understanding the bigger picture

and as the programme involved an Other Government Department in this case). Likewise, in terms of evaluation, it was also identified during the discussion that a ToC tool should be expected to support evaluation teams in collecting timely information and data in a complex environment. There was a consensus among the workshop participants that policies / programmes within Defra would potentially benefit from a methodology to develop nested Theory of Change, especially because of policies / programmes that are applied at different levels and considering multiple stakeholders and government departments.

4.1.5 Summary of understanding and findings from across the ToC workshops

Engagement with the full scope and potential of the ToC tool would likely vary considerably across policy / programme contexts and with different use cases. There are Defra teams that already have a Theory of Change developed as part of a policy / programme, who need to enhance or update it and / or develop certain aspects. There are other teams without a Theory of Change and little time and resource available to develop one fully. There are also teams who need to develop a Theory of Change quickly and for a very specific purpose (e.g., a business case). Clearly, there is a need for a flexible approach to be built into the tool, considerate of different use cases.

All four Defra policy teams engaged with through the workshops saw Theory of Change as important and valuable and even if they would have **differing levels of experience, expertise, and time to engage with a ToC tool**. The need for a well-structured introduction and practical but detailed step-by-step guidance on developing a well informed and complexity-aware Theory of Change, considerate of the timescales that may be available, was clearly an important requirement for the majority of participants. Guidance on when and how to involve wider stakeholders was requested during the workshops and given that a well-constructed Theory of Change can help frame collaborative conversations with programme stakeholders, this would support and facilitate the interaction and communication of policies and programmes in a clear way to multiple stakeholders.

Defra teams at the ToC workshops all broadly engaged with the complexity concepts and principles that they were presented with, and even though the 'richer' non-linear approach to a Theory of Change was more challenging than the linear approach. The symbols visualising complexity – from the Complexity Evaluation Framework (Defra, 2020) – used during the workshops were broadly found to work well in supporting understanding of complexity concepts and as such were seen to be a useful component of the tool's approach.

The need for the tool to be able to **consider and develop nested Theory of Change** was identified during two of the workshops. Defra policies can often be multi-faceted and involve multiple stakeholders and it is not always possible to capture all of the detailed aspects of a policy / programme or intervention's design and implementation in a single easily understandable ToC diagram.

The understanding summarised and highlighted above from the four workshops was assessed and taken forward into the development of the tool alongside the other fieldwork processes (see chapter 5).

5 Development of ToC tool to support Defra's teams in developing complexity-aware Theories of Change

This chapter responds to the project's Objective 3 (see chapter 1) and its requirement to *produce a practical Defra ToC tool for use by policy teams and analytical leads across the department in developing robust, complexity-aware Theories of Change for evaluation and wider policy planning*.

The chapter sets out how the ToC tool has been informed and developed (and tested with Defra). It firstly sets out key considerations and themes from the fieldwork that provide the basis and direction for the design and structure of the tool. It then discusses how and why these have been developed and integrated into the tool's approach and processes. Recommendations for further development of the tool are also provided.

5.1 Key considerations and themes

A key consideration for the 'shape' of the ToC tool, is how it would be used at different scales / levels within Defra to support evaluation of complex policies and programmes and how it would be used to capture complexity across a Theory of Change. It is anticipated that it would be positioned to directly support the structure and collection of evidence over time (for policy teams), and that through this it would be able to indirectly support the development of higher-level metrics (for central teams).

Another important consideration is how the ToC tool itself will be embedded within Defra. While the tool's specification sets out that it is to have sufficient in-built guidance to enable it to be a standalone tool and that it would be 'based' within the Strategic Evaluation Team (SET), it could also be provided to other teams across Defra through e.g., analytical teams, the Policy Hub, Defra Evaluation Community of Practice, Defra Continuous Improvement Team, among others.

A set of broad considerations and implications for the ToC tool are seen across the following themes, based on the findings from the fieldwork (chapter 3 and 4):

- **Interconnected outcomes**: The scoping and ToC workshops showed that Defra teams can often target multiple interconnected outcomes with multiple stakeholders involved in the delivery of policies / programmes. This combines with the outcomes perspective of UK government departments (HMT, 2019) and emphasis on multiple policies and outcomes in both the short and longer-term. The ToC tool should ensure it is able to consider and provide understanding (with clear and consistent definitions) on the system characteristics and outcomes throughout a policy / programme, in both the short and longer-term. The tool should also have the flexibility to break down a high-level Theory of Change into multiple manageable 'nested' components to capture how an intervention(s) is expected to work at different levels.
- **Multiple use cases / stakeholders**: Theory of Change clearly has a wide range of use cases within Defra and these reflect the different requirements for granularity and emphasis from a Theory of Change as well as the time / resources available and level of experience in Theory of Change. Strategic and wider programme teams require an understanding of broader performance and outcomes and the indicators that can support this. While

policy / programme teams (and evaluators) require a more specific understanding of their policies, programmes or strategies and stakeholders (and also to understand how these fit into a broader 'picture'). The scoping, review of literature and resources and the ToC workshops all showed the ToC tool should provide flexibility for a range of users with different Theory of Change requirements, and with differing levels of experience, time and resource availability, while at the same time having the facility to capture and understand how a range of stakeholders from a wider actor ecosystem fit into the delivery process and outcomes.

- **Adaption**: As described above and seen through the fieldwork, Defra's policies, programme and strategies operate in a complex domain and often with significant uncertainty and a changing dynamic. The scoping and the review of literature and resources showed the ToC tool should provide not just a static 'snapshot' of a Theory of Change, but also the facility to consider change and uncertainty over time through reassessment and adjustment (including through facilitating a review / adaption culture for Theories of Change and evidence activities and incorporating the Complexity Evaluation Framework's principles for complexity-aware evaluation management (Defra, 2020)).
- **Collaborative development**: Thinking on, discussing and developing a Theory of Change through a facilitated and collaborative approach was seen as a valuable process by participants at the ToC workshops. This can help enable different perspectives and stakeholder participation to be considered and brought together into a shared vision and articulation of outcomes. The scoping, review of literature and resources and the ToC workshops showed the ToC tool should not just provide a Theory of Change 'product', but also support and facilitate discussion and collaboration during the Theory of Change development 'process', where quality conversations and the development of a narrative are key.

The structure and processes within the ToC tool should ensure an appropriate reflection of the above considerations to help ensure policy and analytical buy-in and highlight its appeal and present it as something 'essential' that can support teams in understanding and 'thinking through' their policy / programme area and evaluation requirement (and also in developing business cases, etc.)

Overall, the fieldwork and ToC workshop sample of Defra teams, in particular, point to a need to showcase, integrate and utilise the potential of Theory of Change (and complexity thinking) and that the ToC tool should be positioned / structured as a facilitated step-by step 'learn by doing' approach for teams to practically use and implement the tool with supporting guidance and different use options for users to consider based on their needs / resources.

5.2 Tool testing and feedback

The testing and feedback workshop with a selection of eight representatives from Defra central and policy / programme teams on draft 1 of the ToC tool, provided first reflections on the overall design and structure of the tool. The feedback from participants focussed on suggestions and recommendations to enhance the definitions and processes within the tool and its presentation. The main points of feedback identified to be taken forward into the second draft 2 of the tool included:

- Condensing the tool so as to focus on the practical Theory of Change steps (by redrafting / removing content considered not essential for practical users).
- Ensuring content in the ToC tool is flexibly framed for different users (by reviewing content framing throughout the tool and by supporting users who may not wish to work through the tool sequentially and with different use cases highlighted upfront).
- Developing new / enhanced content (i.e., guidance and a template to translate from the Theory of Change to a logic model, and guidance and practical support for developing nested Theory of Change models).

The testing of draft 2 of the ToC tool through a survey with a group of seven representatives from Defra's Evaluation Community of Practice provided feedback on the tool's user relevance and practical useability. The overall response was positive, with comments and suggestions focussed on points of technical and structural detail and on presentation. The main points of feedback identified to be taken forward into the final version of the tool included:

- Need for summary slide deck, given the volume of material and associated difficulty for a non-expert to engage with the Theory of Change / complexity-based detail in the tool and in a short space of time.
- Providing more explanation on concepts presented / used within the tool and the principles behind these.
- Incorporating of additional external reference material, to point users to further guidance / detail.
- Enhancing of tool's readability (condensing level of detail) and navigation.

5.3 Overview of the tool

The fieldwork and the ToC tool testing and feedback process have all shown the need for the tool to have a clear, accessible and consistently defined structure, processes and definitions and capacity for it to be delivered to tight development and delivery timescales if needed. The tool is based in MS PowerPoint, which was chosen for its structural simplicity and wide understanding of how to use / navigate, as well as its ability to be viewed easily and quickly by an individual or in a group setting on-screen (and either online or in-person) and also, potentially updated as / if needed.

The ToC tool has been designed to enable it to support a range of Defra use cases (see chapter 5.4), with a practical step-by-step approach and with sufficiently detailed built-in supporting guidance and a separate set of editable templates. The structure and processes within the tool are designed to be proportionate and appropriate for the situation (and starting point) of Defra teams who would use it and with the flexibility to adapt it to their need and resources.

Figure 3 illustrates the ToC tool 'space', which centres on a main PowerPoint slide deck structure containing the guidance and step-by-step approach, as well as a separate editable template slide pack (as an annex 1) and a separate summary pack. The tool 'space' also includes the recommended use of a workshop(s) to facilitate the Theory of Change development process.

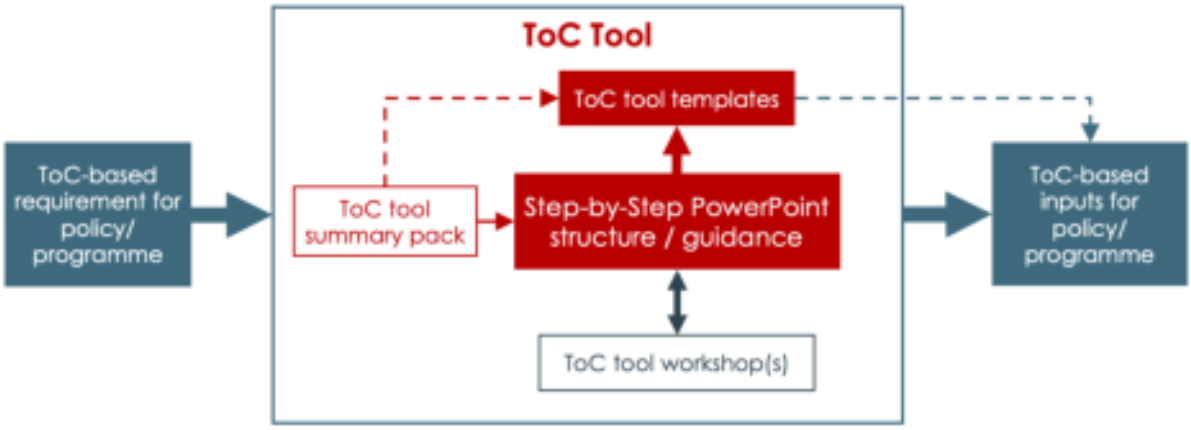

Figure 3. ToC tool structure

The ToC tool summary PowerPoint slide deck was developed to provide teams with a quick introduction and overview of the key components of the tool (i.e., developing the Theory of Change; challenging and strengthening it; translating into logic map, if needed; planning an evaluation; and, using a workshop(s) as part of process, if appropriate).

The tool is broadly structured into three parts within the main PowerPoint structure and guidance slide deck[9]:

1. **Introduction to the ToC tool**
    - Setting the scene: This section briefly introduces key Theory of Change concepts as well as key considerations for the tool.
    - A bespoke approach for Defra: The two-phased approach used in the tool for developing a complexity-aware Theory of Change is introduced in this section, including rules and conventions to help standardize the process and the format of the Theory of Change (ToC) map used in the tool.
2. **Practical steps to develop Theory of Change**
    - Phase 1 (develop Theory of Change and ToC map): This section is a central part of the tool, where a process for creating a complexity-aware Theory of Change and the ToC map is set out.
    - Phase 2 (challenge and strengthen Theory of Change and ToC map): A process for narrowing down, refining and sense checking the Theory of Change and ToC map that has been developed in Phase 1 is set out.
    - Facilitation and workshop: Sets out recommendations and guidance to facilitate the overall Theory of Change process.
3. **Using the Theory of Change**

[9] Note the summary pack contains selected key parts from the ToC tool, to allow potential users to understand and quickly access those parts of the tool that they might need. The template pack (annex 1) contains editable templates from the ToC tool.

- Visualising and documenting the Theory of Change and ToC map: Provides guidance on how to visualise and represent the Theory of Change and ToC map and narrative developed earlier in the tool.
- Using Theory of Change in policy: Describes different uses of Theory of Change in policy, including communicating with stakeholders, support to business cases, and to evolve and refine policies.
- Using Theory of Change in planning evaluation, monitoring and data collection: Provides guidance on how Theory of Change can be used for planning and implementing an evaluation of complex programmes, policies or strategies.

The ToC tool also includes a separate short section to provide guidance on the use of nested Theory of Change (which is signposted throughout the tool at appropriate points) and a set of additional material on Theory of Change and complexity.

5.4 Discussion of tool's introduction and opening processes and key definitions

During the delivery of the ToC workshops it was found that having a general introduction to the key concepts and principles of Theory of Change and of complexity was helpful and also an efficient way to get participants 'onto the same page'. The range of use cases (and levels of user experience) identified through the fieldwork and the broad theme on multiple use cases / stakeholders (chapter 5.1) pointed to the need to have an introductory / opening part of the tool that would bring tool users towards a more common starting point and provide guidance on how to access the tool with different use cases and on the approach used in the tool and its principles and key definitions.

As briefly described in the tool overview provided in chapter 5.3, the first part of the tool sets the scene and describes the bespoke approach that has been developed. It begins by setting out key Theory of Change concepts and principles and highlights how both the process of developing a Theory of Change and the product itself both bring benefit and it defines Defra's complex policy context and the challenges of representing complexity in Theory of Change.

The introductory part of the tool also provides guidance on accessing the tool for different use cases (see discussion below). It then sets out the recommended approach that has been used in the tool, through the use of a vertical ToC map format (see also below, for discussion of the rationale for this and its definitions and principles).

Accessing the ToC tool – use cases

The fieldwork scoping and interviews (chapter 3) indicated the range of drivers for using Theory of Change (and a ToC tool) in Defra, including the Public Value Framework and the emphasis from HM Treasury and Cabinet Office on planning and accounting for outcomes. Furthermore, the ToC workshops (chapter 4) showed a requirement for the tool to be used at different scales / levels within Defra (and as broadly defined under the 'multiple use cases / stakeholders' theme in chapter 5.1). The need for guidance on the different contexts and modes in which Theory of Change can be used was identified and an understanding of how users would need to be clear about the end goal of their Theory of Change to ensure that they approach and interact with the tool in an appropriate and efficient way.

There are therefore a number of potential Defra use cases set out and provided for in the ToC tool to engage users, which differ in terms of time and resource availability and on how much prior work has been undertaken to clarify and understand the policy problem and to understand barriers, interdependencies with other policies and issues (see Appendix 1). The specifics of each case will determine the tool preparation, planning and tailoring process for each user and how the tool will be approached and interacted with to fit with their needs and resources.

As part of the preparation, planning and tailoring process for engaging with the ToC tool, users are encouraged (in the opening section of the tool) to consider a set of questions to help quickly determine how they would interact with the tool (e.g., a light touch / rapid approach or more in-depth / detailed approach). These 'framing' questions include:

- Why is a Theory of Change being developed?
- How much time and resources are there?
- What has already been done?
- How important is the policy?
- How uncertain are aspects of the policy?
- How complex is the policy and environment in which it is being implemented?
- Is the programme or strategy large scale?
- What stage of development is the policy at?
- What scope is there for policy design or implementation adaption?

The answers to the questions above and how users will engage with the tool would be based on but not limited to: whether the user is developing, reviewing a policy / programme or starting to plan an evaluation; if they have time and resources available; the extent of the work they would have already done; whether the policy / programme is 'simple' and if there is a strong evidence base, or if there is a limited evidence base and perhaps with levels of uncertainty and complexity. The answers to the questions might also include whether the user wishes to break the Theory of Change down and develop discrete 'nested' Theories of Change for different parts of the policy / strategy after developing an initial high-level Theory of Change (see chapter 5.5 for further detail on the potential need identified in the fieldwork for nested Theory of Change and how the ToC tool responds to this).

As broadly defined under the 'multiple use cases / stakeholders' theme described in chapter 5.1, the ToC workshops and scoping interviews showed that the ToC tool should provide flexibility for a range of users with different Theory of Change requirements, and with differing levels of experience, time and resource availability. The opening part of the tool (combined with the separate summary and template packs) allows users to engage with the tool in a flexible way that is considerate of their context. Users of the tool are encouraged to not necessarily work through and follow each section and step in the tool, but rather to consider their own 'starting point' and requirement to develop a Theory of Change and then to work through the tool accordingly (i.e., skipping parts or with a lighter touch in certain sections).

Adapting Theory of Change practice for ToC tool to be complexity sensitive

There are particular challenges in representing complexity in Theories of Change and there have been many criticisms of Theory of Change diagrams. For example, the fieldwork's review of literature and resources reported that Theories of Change typically lack properties to account for complexity and the complex nature of

interventions (chapter 3). Theory of Change diagrams are often represented in an inconsistent manner that undermines understanding and their application. The review of the literature and resources also notes that when 'developing a Theory of Change to analyse complex systems / initiatives that requires the involvement of different stakeholders and perspectives, use terminology, definitions and elements that are understood by all the practitioners / stakeholders involved'. Furthermore, during the ToC workshops, the Defra teams were found to all broadly engage with the complexity concepts and principles that they were presented with and even if the 'richer' non-linear approach was more challenging. Using a set of conventions for the format of Theory of Change diagrams, can make it easier for others to make sense of the Theory of Change and not just those who developed it. An institutional setting and this ToC tool provides a timely opportunity to enact such conventions and particularly so given the need to consider complexity and Theory of Change.

The design of the ToC tool and format of the ToC map and principles used for Theory of Change in the tool have been informed by the findings from the fieldwork (including as described above) and experience and insights gained from a Theory of Change approach developed previously[10] which was identified during the tool's development as having a number of very relevant and aligned characteristics for the ToC tool (e.g., flexibility and ability to consider complex policy contexts).

Overall, the approach used in the tool attempts to address many of the challenges and shortcomings of approaches to Theory of Change that were identified in the review of literature and resources (chapter 3), and there appeared to be a strong alignment with the requirements and complexities identified in the ToC workshops and the Complexity Evaluation Framework (i.e., Defra policy complexities and the identification of themes on interconnected outcomes and adaption in chapter 5.1). There was also a strong logic for using it alongside / subsequent to systems mapping (and other problem formulation tools) which focus on understanding the problem and finding plausible intervention routes in complex settings.

The ToC map format and principles in the tool for Theory of Change use the structure and terminology shown in the ToC map template in Figure 4. This format and approach is central to the ToC tool's flexibility and ability to be used in a complex system setting. The labels are applicable at multiple levels (project, programme, multiple programmes, strategies) and the format lends itself easily to the use of 'nested' theory of change where more detailed change pathways can be unpacked outside of the high-level representation of the Theory of Change.

[10] A Theory of Change approach (BEIS, 2020) was developed by Matthew Baumann, Alex Mason, and Jane Walker during 2014-2015 for the Department of Energy & Climate Change (now Department for Business, Energy & Industrial Strategy).

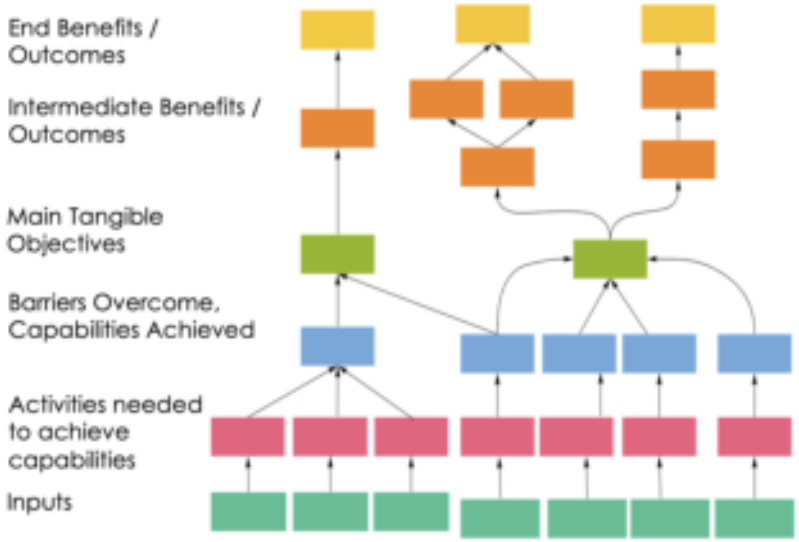

Figure 4. ToC tool map

The format and terminology used in the ToC map differs to a 'traditional' logic model[11] and the terminology often used in government settings (inputs, activities, outputs, outcomes, impact) which may be useful for some evaluation purposes (e.g., evaluation of discrete interventions), but tend to less useful for theory-based evaluation because they tend to afford less opportunity to analyse and reflect causal processes during design and evaluation. The tool also recommends a vertical orientation of the ToC map with a central starting 'point' (i.e., the Main Tangible Objectives). The consistent use of the terms, format and conventions promotes easier understanding and recognition of the policy logic – helping overcoming one of the central critiques of Theory of Change that they are often only understandable to the people involved in developing them.

The definitions of the labels used in the ToC map for the domains in a Theory of Change (as shown in Figure 4) are set out below and in the sequence that they are approached within the tool's practical steps (i.e., through Phase 1 and 2, which are discussed in the next section):

1. The main tangible objectives are firstly identified: The main objectives of a policy are the key tangible goals that can be expected to be achieved during the lifetime of the policy. This may be achieved through the delivery of key outputs (which are the product of the activities in the map) or a significant behaviour change or a shift in how a 'system' operates.
2. Intermediate outcomes are then considered: Achieving the main objectives of the policy will bring direct short and long term benefits or outcomes. It might also unlock, drive, catalyse, support a range of other potential benefits (and possibly disbenefits) also known as indirect benefits. Benefits are generally

[11] The ToC tool includes guidance and a template to produce a logic model (e.g., if needed for a business case) as an additional step after developing a Theory of Change and ToC map (see chapter 5.6).

identified with reference to key stakeholders – considering how delivery of an objective may affect each stakeholder.

3. Longer-term outcomes are then identified: Longer-term outcomes – traditionally known as impacts – may only partially be a consequence of the achievement of the main objectives.
4. Barriers overcome and the capabilities achieved are then defined: The objectives of a policy are usually achieved when key 'barriers' or 'market failures' have been overcome. The tool works through identifying barriers and then conceptually 'flipping' them to represent the capabilities that are needed to achieve the main objective(s). The mapping process then focuses on the activities needed to achieve each 'capability'.
5. Activities are identified: A range of activities and resources will be needed to generate the capabilities. The final Theory of Change should include all the planned activities showing how they collectively 'should' deliver the capabilities.
6. Inputs are then set out: The inputs are generally defined as the initial funding or stimulus provided by central government that initiates and makes possible the programme activities.

5.5 Discussion of tool's practical steps to develop Theory of Change

Following from the discussion in chapter 5.4, on how the approach to the tool adapts Theory of Change practice to provide a tool that is flexible and able to be used in a complex system setting, this can be considered as the practical 'heart' of the tool, with two sequential phases: firstly, to develop the Theory of Change (Phase 1) and then to challenge and strengthen it (Phase 2).

As described in chapter 5.4, under accessing the tool – use cases, it is key to note here is that users do not necessarily have to complete all of the steps in Phase 1 and Phase 2 and use all the templates in the tool to get a sufficient Theory of Change. The tool is able to be approached in a flexible manner with users adapting it to their needs and resources (and with e.g., a lighter touch for certain sections and steps).

In this central part of the tool, a practical two-phased step-by-step process incorporates the ToC map format and approach described in chapter 5.4 and considers and integrates complexity at multiple steps and with the prompting and encouragement of an iterative process (see Figure 5). The 'core' phase of the process is Phase 1, where the Theory of Change and ToC map is developed (with nine guided steps). Phase 2 then challenges and strengthens the Theory of Change and ToC map (with six steps).

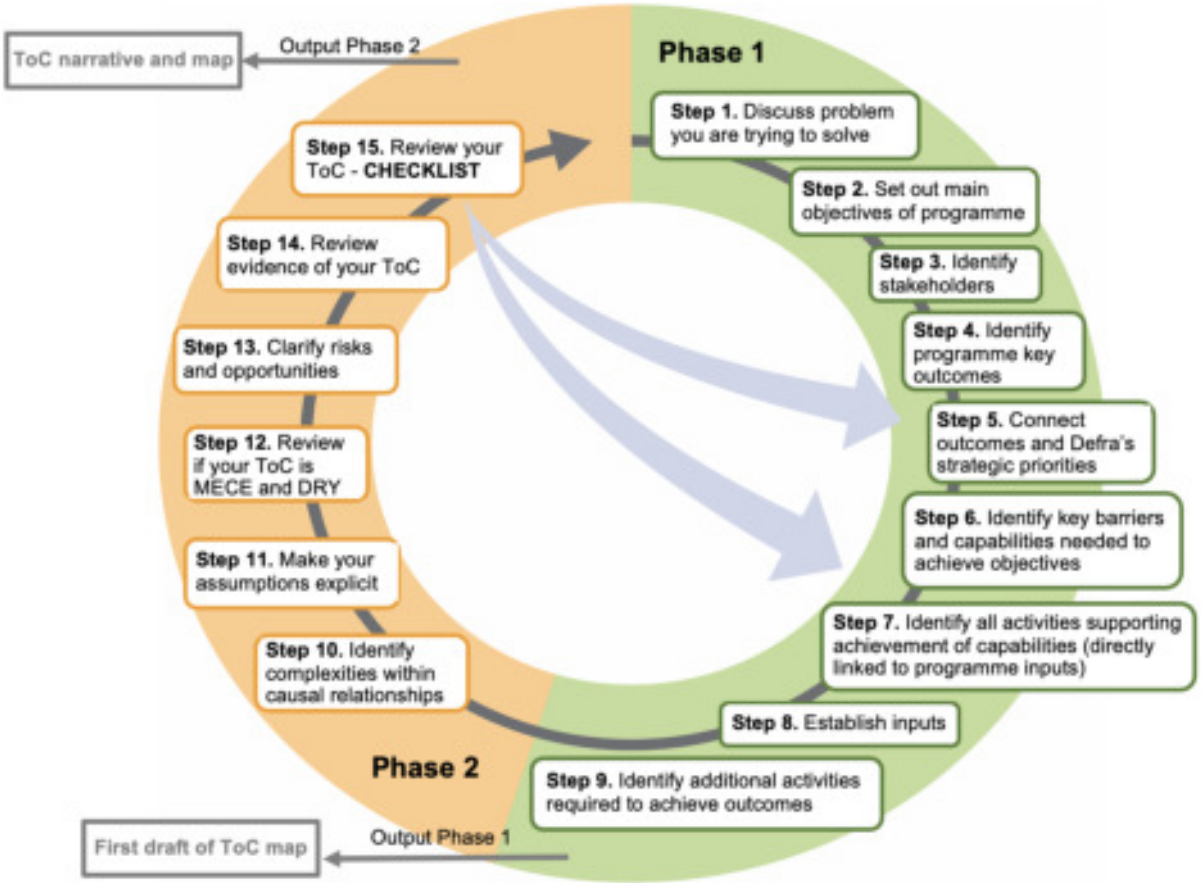

Figure 5. ToC tool Phase 1 and 2

Phase 1 (develop the Theory of Change)

One of the key themes identified through the fieldwork (interconnected outcomes), as a result of Defra teams often targeting multiple interconnected outcomes and with multiple stakeholders involved, found that the tool should be able to consider and provide understanding on (complex) system characteristics and outcomes throughout a policy / programme.

As can be seen in the sequence of Phase 1 steps shown in Figure 5 and in the associated ToC map domains (see Figure 4) and the sequence that they are defined within the steps, the Theory of Change is developed during Phase 1 and complexity is considered and integrated (i.e., complex system characteristics and outcomes). Key elements to build an initial journey map / pathway to change and the contextual elements that might impact on the policy / programme initiative that is being considered are explored across the steps. Content is captured in a ToC map as Phase 1 progresses, both visually (in the emerging map template) and narratively (in narrative templates).[12]

[12] A set of templates provided in a separate annex (also PowerPoint based, as described in chapter 5.3) represent the content from within the three main parts of the tool. They have been developed to be easily accessible and editable, either by an individual user or in a workshop setting on-screen (online or in-person).

Part of the underlying detail within one of the themes (multiple use cases / stakeholders) identified from the fieldwork (chapter 5.1) is that the tool should provide for a range of users while at the same time having the facility to capture and understand how a range of stakeholders from a wider actor ecosystem fit into the delivery process and outcomes. The step-by-step approach within the tool and its guidance can provide for a participatory process with multiple stakeholders and sets out that people with an understanding of the following should be involved in the development of the Theory of Change:

- Problem to be addressed and its drivers.
- Policy objectives and scope of the policy or programme.
- Stakeholders involved.
- Barriers and opportunities.
- What will be delivered, by whom.
- Potential outcomes, benefits and disbenefits.

Another theme (collaborative development) identified that the tool should be considered as not just a 'product' but that the 'process' of developing the Theory of Change through quality conversations and a collaborative approach is equally important. Phase 1 has therefore been designed as a creative, constructive process where ideas and thinking can emerge through brainstorming and discussion. The step-by-step approach within the tool and its guidance provide for a collaborative process and sets out that the following should be involved in the process: policy teams; analysts and experts – people who understand the evidence base; and, stakeholders and partners / their representatives (including any group or individual that has a role, interest, can affect or be affected by the initiative) including civil society organisations, private companies, other government departments and in some cases other areas inside Defra).

Phase 2 (challenge and strengthen the Theory of Change)

As can be seen in the sequence of steps shown in Figure 5, Phase 2 focuses on challenging and strengthening the Theory of Change developed during Phase 1.

Phase 2 considers complexities / casual relationships as well as the assumptions, barriers, and opportunities. At the end of Phase 2, the ToC map and narrative should have been developed with sufficient content and thinking captured and integrated from across the two phases. Phase 2 is all about narrowing down, refining and sense checking what has been developed in Phase 1 and spending time on the detail – questioning the logic, questioning the complex causal relationships and assumptions, and thinking about the risks.

One of the key themes identified through the fieldwork (adaption), as a result of Defra's policies, programme and strategies operating in a complex domain and often with significant uncertainty and a changing dynamic, found that the tool should provide not just a static snapshot of a Theory of Change, but also the facility to consider change and uncertainty over time through reassessment and adjustment. The tool has been structured to allow for iterations of a Theory of Change, whereby earlier steps in Phase 1 and 2 can simply be revisited as part of a policy / programme cycle and/or when new detail and information comes to light. Phase 2 of the tool also has a specific activity / question within one of its steps on

defining which parts of the Theory of Change is particularly uncertain or poorly understood in order to focus on and review those areas of greatest uncertainty.

If required and appropriate, a face-to-face workshop (a room, with sticky notes) or a virtual workshop (using an online platform) can be used during the practical development of the Theory of Change during Phase 1. A workshop could also be used for most of the steps in Phase 2 (but with, for example, the exception of the final step, which is a desk-based review of evidence). See also next section for further discussion on the potential use of workshops.

Provision of facilitation and use of workshop(s)

During the fieldwork, the facilitated and collaborative approach used during the ToC workshops for supporting teams with their Theory of Change was seen as a valuable process by participants (and as indicated through one of the themes set out in chapter 5.1, on collaborative development). The use of an online platform (Miro in this case) together with a lead facilitator at the ToC workshops was found to be particularly helpful in bringing a virtual team together, as it enabled them to think on and discuss how to develop their Theory of Change in a collaborative environment with a wide range of expertise present and where different perspectives could be considered and brought together through a facilitated approach.

As Defra operates in a complex policy environment, working with complex systems and multiple stakeholders and perspectives and with the steer provided through the delivery of the ToC workshops during the fieldwork, the tool recommends that Phase 1 and Phase 2 could be implemented in a facilitated workshop environment (through one or more workshops, subject to the scale of complexity and clarity of the policy and on the number of staff and stakeholders involved). Workshops are a good approach for developing Theory of Change because they bring together multiple stakeholders to contribute from multiple perspectives, which allows assumptions to be tested.

A set of guidance and suggestions and tips are provided in the tool on how Phase 1 and 2 can be conducted and facilitated in a workshop setting, as well as on how the outputs of both phases (ToC map and a narrative) can be represented and visualised for use through such a setting / approach.

Nested Theory of Change

The ToC workshops during the fieldwork phase identified a need in Defra teams for the ToC tool to be able to consider and develop nested[13] Theories of Change, as their policies / programmes can be applied at different levels and with multiple stakeholders and government departments. And for when they might have than one Theory of Change for each policy, with for example, a principal Theory of Change focused on a policy or scheme level and multiple 'nested' Theories of Change focused at a more local level.

[13] A series of nested Theories of Change linked to a high-level Theory of Change can be a helpful tool for helping to break down a high-level Theory of Change into multiple manageable components to capture how an intervention(s) is expected to work at different levels. They can show how the different parts of an intervention 'unpack' and fit together. Nested Theories of Change can also be a good way to engage and communicate a Theory of Change or parts of it with external partners and stakeholders.

The map template shown in Figure 4 can if required be broken down by developing discrete 'nested' Theories of Change for different policy 'parts' and after developing an initial high-level Theory of Change. The process for this and how it fits into the practical steps outlined above is described and signposted throughout the tool at appropriate points.

5.6 Discussion of tool's guidance for using Theory of Change

Visualising and documenting the Theory of Change

The review of literature and resources in the fieldwork indicates that the process of creating a Theory of Change can be more productive when a good visualisation is used and that it is important to create visualisations that are easy to understand and attractive so as to motivate people to fully engage in the process, with the use of consistent terminology, definitions and elements that are understood by all the practitioners / stakeholders involved. As set out above through Phase 1 and 2, the tool responds to this by providing structured guidance and definition on visualising and documenting the Theory of Change, through the use of a set of editable templates to develop a ToC map. Furthermore, as a ToC map may not capture all of the detail or be suitable for all contexts, a ToC narrative can help to capture this detail. Structured guidance is also provided in the tool to document the Theory of Change (through a narrative) and to capture the detail that has not been defined in the ToC map, through a set of templates to capture what has been discussed during Phase 1 and 2.

In addition to the identified need for an appropriately developed Theory of Change visualisation, the fieldwork scoping and interviews and the ToC workshops highlight that Defra's policies operate in an uncertain and changing environment and that a team's understanding and interpretation of their policy would likely change over time. The retaining of a 'working version' of a Theory of Change which can be quickly updated with new information could be helpful here. With this in mind and as the process and requirement for developing a Theory of Change can be very detailed, the tool recommends and provides guidance on the retaining of a 'working version' of the ToC map that has been developed through Phase 1 and 2 with more detail in it than the 'final version' that would be used for communicating the ToC.

Translating ToC tool map to logic model

The ToC workshops and the tool feedback process showed that teams, in certain cases, may need to produce a logic model as a final step after developing a Theory of Change and ToC tool map, based on their particular context and ultimate requirement (e.g., for a business case).

The ToC tool responds to this potential need by including, as part of its opening introductory section, guidance on the distinctions between a ToC map and a logic model, as well as further structured guidance and an editable template for translating the ToC map into a logic model (as shown in Figure 6).

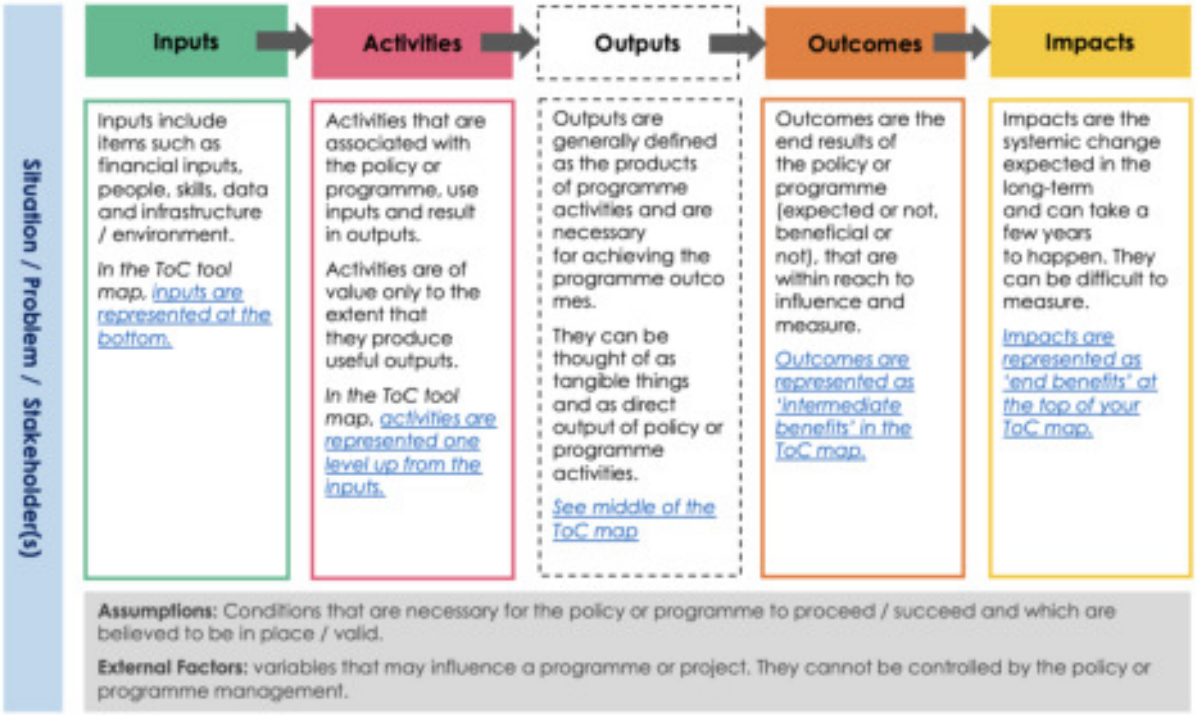

Figure 6. Translating ToC map into logic model

Using the ToC tool in policy evaluation

The initial specification (ITT) for the ToC tool set out that it should support Defra teams in policy evaluation and implementing the Public Value Framework approach.

The tool has been developed (through its user case and two-phased approach) so that it can support policy design, by clarifying policy activity to outcome pathways, capturing and considering the wider policy system, and developing and reviewing policy. The tool has also been developed so that it can help provide a framework for evaluation design and delivery, by identifying what to measure and what causal relationships need to be understood, clarifying the risks and assumptions, and planning how to capture evidence on if a policy is working and to capture lessons.

A set of succinct recommendations are provided in the tool (within a specific section) to summarise and point to how a ToC map and narrative developed by the tool could be used for different purposes in policy, such as for planning, evolving and / or refining a policy / programme, communication with stakeholders and supporting business cases.

A separate overview section is also provided in the tool to summarise and point to how the ToC map and narrative can be used for planning an evaluation, monitoring and data collection. The ToC map (and the logic model, if developed by a user) are able to provide a basis for planning monitoring and data collection. Guidance and editable templates are provided within the tool, to help capture and represent key metrics (such as KPIs) that may need to be measured, and to identify data collection sources that could be useful for conducting an evaluation. For the interested user, this section also includes a short, referenced discussion of theory-based evaluation and adaptive management approaches.

5.7 Recommendations for further development of tool

Defra Theory of Change practitioners' network and champions

As it is anticipated that Theory of Change will be an integral part of Defra's approach to policy / programme design and evaluation (and that the ToC tool could be expected to be used across Defra), it is suggested that encouragement and support to Defra staff who would want to develop their Theory of Change skills and capabilities could be more formally recognised by setting up a practitioners' network for Theory of Change specialists.

This network could provide an opportunity for staff who are leading Theory of Change work and developing Theory of Change skills to share practice experiences, discuss challenges faced, and provide advice and support to one another.

The discussions during the scoping and ToC workshops noted the benefit of having a key Theory of Change person / champion to support the drafting of an 'initial' Theory of Change before discussing it more widely in a group setting. This could facilitate a 'starting point' within a small group and on which the wider team could then build upon.

ToC tool 'roadshow' for Defra teams

A 'roadshow' for Defra teams on the tool could support the embedding of it across Defra, through a facilitated introduction on its purpose, structure and functionality for different use cases.

ToC tool 'aftercare'

As time passes and users engage with the tool (and likely in a multitude of ways) a degree of aftercare might well be needed to maintain and refine the tool's value and positioning. It is suggested that the tool be updated / refreshed on an annual basis by reviewing its content and use case positioning within Defra.

Integration of example Theories of Change, developed through ToC tool

Worked examples of Theory of Change developed through the use of the tool by Defra teams anchored to specific use cases would be helpful to integrate into the tool to demonstrate its utility for other users. This could be implemented through the above 'aftercare' process.

6 References

Archibald, T., Sharrock, G., Buckley, J., & Cook, N. (2016). Assumptions, conjectures, and other miracles: The application of evaluative thinking to theory of change models in community development. Evaluation and Program Planning, 59, 119–127.

Arensman, B., van Waegeningh, C., van Wessell, M. (2018). Twinning "Practices of Change" With "Theory of Change." American Journal of Evaluation, 16, 39(2), 221-236.

Barber, M., (2017). Delivering better outcomes for citizens: practical steps for unlocking public value.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/660408/PU2105_Delivering_better_outcomes_for_citizens_practical_steps_for_unlocking_public_value_web.pdf.

Department for Business, Energy and Industrial Strategy (BEIS) (2020). BEIS Monitoring and Evaluation Framework.
https://www.gov.uk/government/publications/beis-monitoring-and-evaluation-framework

Boyd, I., (2015). Evaluating Complex Policy Interventions in Defra [online presentation slides].
https://esrc.ukri.org/files/funding/funding-opportunities/centre-for-evaluating-complexity/cec-defra-presentation/.

Centre for the Evaluation of Complexity Across the Nexus (CECAN) (2019). Using complexity and ToC to transform regulation: a complex ToC for the Food Standards Agency's 'Regulating Our Future' Programme.
https://www.cecan.ac.uk/wp-content/uploads/2020/08/EPPN-No-15-Food-Standards-Agency%E2%80%99s-%E2%80%98Regulating-Our-Future%E2%80%99-Programme-.pdf.

Davies, R. (2018). Representing theories of change: Technical challenges with evaluation consequences. Journal of Development Effectiveness, 10(4), 438–461.

Deane, K. L., Dutton, H., & Bullen, P. (2020). Theoretically integrative evaluation practice: A step-by-step overview of an eclectic evaluation design process. Evaluation, 26(1), 98–118.

Department for Environment, Food and Rural Affairs (Defra) (2019a). 25 Year Environment Plan.
https://www.gov.uk/government/publications/25-year-environment-plan.

Department for Environment, Food and Rural Affairs (Defra) (2019b). A Green Future: our 25 Year Plan to Improve the Environment; Annex 1: Supplementary evidence report.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/673492/25-year-environment-plan-annex1.pdf.

Department for Environment, Food and Rural Affairs (Defra), and Government Office for Science (GOS) (2019). Press release: Science research programme launched to inform Defra policy making.
https://www.gov.uk/government/news/science-research-programme-launched-to-inform-defra-policy-making.

Department for Environment, Food and Rural Affairs (Defra) (2020). The Complexity Evaluation Framework v2.
http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=20400&FromSearch=Y&Publisher=1&SearchText=complexity&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description.

Douthwaite, B., & Hoffecker, E. (2017). Towards a complexity-aware theory of change for participatory research programs working within agricultural innovation systems. Agricultural Systems, 155, 88–102.

Douthwaite, B., Ahmad, F., & Shah, G.-M. (2020). Putting Theory of Change into Use in Complex Settings. Canadian Journal of Program Evaluation, 35(1), 35–52.

Ebenso, B., Manzano, A., Uzochukwu, B., Etiaba, E., Huss, R., Ensor, T., Newell, J., Onwujekwe, O., Ezumah, N., Hicks, J., & Mirzoev, T. (2019). Dealing with context in logic model development: Reflections from a realist evaluation of a community health worker programme in Nigeria. Evaluation and Program Planning, 73, 97–110.

Freer, G., & Lemire, S. (2018). Can't See the Wood for the Logframe: Integrating Logframes and Theories of Change in Development Evaluation. Canadian Journal of Program Evaluation, 33(3) (Special Issue), 336–353.

HM Treasury (2019). Public Value Framework and supplementary guidance.
https://www.gov.uk/government/publications/public-value-framework-and-supplementary-guidance.

HM Treasury (2020a). Spending Review 2020.
https://www.gov.uk/government/publications/spending-review-2020-documents/spending-review-2020.

HM Treasury (2020b). Spending Review 2020: Provisional Priority Outcomes and Metrics.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/944491/Provisional_priority_outcomes_and_metrics.pdf.

HM Treasury (2020c). The Magenta Book.
https://www.gov.uk/government/publications/the-magenta-book.

James, C. (2011). Theory of Change Review. Report Commissioned by Comic Relief.

Koleros, A., & Mayne, J. (2018). Using Actor-Based Theories of Change to Conduct Robust Evaluation in Complex Settings. Canadian Journal of Program Evaluation, 33(3) (Special Issue), 292–315.

Koleros, A., Mulkerne, S., Oldenbeuving, M., & Stein, D. (2020). The Actor-Based

Change Framework: A Pragmatic Approach to Developing Program Theory for Interventions in Complex Systems. American Journal of Evaluation, 41(1), 34–53.

Lam, S. (2020). Toward learning from change pathways: Reviewing theory of change and its discontents. Canadian Journal of Program Evaluation, 35(2), 188–203.

Lankelly Chase_Thinking-Big-report_2018.pdf. (n.d.).

Mayne, J. (2015). Useful Theory of Change Models. Canadian Journal of Program Evaluation, 30(2), 119–142.

Mayne, J. (2017). Theory of Change Analysis: Building Robust Theories of Change. Canadian Journal of Program Evaluation, 32(2). https://doi.org/10.3138/cjpe.31122

Mayne, J. (2019). Revisiting Contribution Analysis. Canadian Journal of Program Evaluation, 34(2), 171–191.

Mayne, J., & Johnson, N. (2015). Using theories of change in the CGIAR Research Program on Agriculture for Nutrition and Health. Evaluation, 21(4), 407–428.

McConnell, J. (2019). Adoption for adaptation: A theory-based approach for monitoring a complex policy initiative. Evaluation and Program Planning, 73, 214–223.

National Audit Office (2017). Implementing the UK's exit from the European Union: The Department for Environment, Food & Rural Affairs. https://www.nao.org.uk/wp-content/uploads/2017/12/Implementing-the-UKs-exit-from-the-European-Union-the-Department-for-Environment-Food-Rural-Affairs.pdf.

Rolfe, S. (2019). Combining Theories of Change and Realist Evaluation in practice: Lessons from a research on evaluation study. Evaluation, 25(3), 294–316.

Vogel, I. (2012). Review of the use of 'Theory of Change' in International Development. Report commissioned by the UK Department for International Development (DFID).

Wilkinson, H., Hills, D., Penn, A., & Barbrook-Johnson, P. (2021). Building a system-based Theory of Change using Participatory Systems Mapping. Evaluation, 27(1), 80–101.

Zazueta, A. E., Le, T. T., & Bahramalian, N. (2020). Development Trajectories and Complex Systems–Informed Theories of Change. American Journal of Evaluation, 42(1), 110-129.

Appendix 1

Indicative use cases set out within the ToC tool for consideration as part of Theory of Change initial preparation and planning process:

- Policy already in place and being delivered, evaluation should have been commissioned alongside the policy but not possible. Need to develop a Theory of Change for the policy to support planning of an evaluation.
- Reviewing a policy, perhaps to enhance. Have good Theory of Change for policy, but needs review / Do not have good Theory of Change for policy, needs to be developed.
- Policy idea is already developed, expected to go to investment committee in few weeks. No scope for refinement or for detailed Theory of Change work, but keen to quickly represent the policy logic, and key risks.
- Policy idea is already developed, expected to go to investment committee in few months. Some scope for refinement, keen to use Theory of Change to learn and improve, understand, represent policy logic, identify risks.
- Planning pilot for a programme, with very limited spend (future roll-out would be high spend and of high importance). Significant scrutiny expected and reasonable evidence base, but limited time and resource to use Theory of Change.
- Planning complex, major project or multi-policy strategy, with high ambition / risk / stakes. Significant scrutiny expected and evidence base limited, but some time and resource to develop Theory of Change.
- Planning relatively simple policy, which represents minor change from existing policies / practice. Strong evidence base and few risks, but limited time and resource to use Theory of Change.
- Have relevant / timely idea for a policy, there is a funding stream to apply. Several weeks to refine idea, but not considered departmental priority and limited resource to develop Theory of Change.

technopolis group

www.technopolis-group.com