Supporting adaptive management

Monitoring and evaluation tools and approaches

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Key messages

- This working paper introduces a set of monitoring and evaluation (M&E) tools and approaches, discussing their potential usefulness in supporting adaptive management in development and humanitarian programmes. It emphasises adaptive programmes characterised by complex aspects, such as: (1) they are innovative; (2) they have uncertain pathways for change; or (3) they operate in uncertain or unstable environments.

- The majority of these tools have been used in international development for many years. However, adaptive management brings additional challenges for monitoring and evaluating programmes, as they require intentional M&E design from the start that is oriented towards both learning and accountability.

- All of the tools and approaches introduced in this paper have potential to support learning and adaptation, although in various ways and at different stages of a programme. Some tools can support strategic planning and diagnosing throughout a programme – especially during design and inception – while others can help analyse causal relationships at specific points in a programme. It is important to tailor the approach used for its intended purpose. However, whether learning and adaptation happens depends also on factors other than the choice of M&E methods.

- For some of these approaches a considerable body of evidence already exists but, for many, more practical examples and systematic analysis is needed. In addition to building the evidence base concerned with which approaches are suitable for different types of adaptive programmes and why, it is also important to improve understanding of the enabling environmental conditions necessary for the tools and approaches outlined here to facilitate and strengthen evaluative thinking, evidence-informed decision-making and ongoing programme iteration.

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Acronyms and abbreviations

CH	Chukua Hatua (programme)
CIFF	Children's Investment Fund Foundation
CLA	collaborate, learn, adapt
DFID	Department for International Development
DIME	Development Impact Evaluation (programme)
DRC	Democratic Republic of Congo
GLAM	Global Learning for Adaptive Management
IPA	Innovations for Poverty Action
LASER	Legal Assistance for Economic Reform
M&E	monitoring and evaluation
MEL	monitoring, evaluation and learning
PEA	political economy analysis
PRISE	Pathways to Resilience in Semi-arid Economies
RCT	randomised controlled trial
Sabal	Sustainable Action for Resilience and Food Security programme
SAVI	State Accountability and Voice Initiative
SIEF	Strategic Impact Evaluation Fund
SRP	Syria Regional Program
ToC	theory of change
U-PCLG	Uganda Poverty and Conservation Learning Group
USAID	United States Agency for International Development

1   Introduction

1.1   The aim and scope of this working paper

The aim of this working paper is to introduce a small set of monitoring and evaluation (M&E) tools and approaches and to highlight their potential usefulness for supporting adaptive management in development and humanitarian programmes. These approaches are not new by any means. In most cases, they have been used in development and humanitarian programmes for years. Moreover, we do not want to repeat what has already been written in numerous M&E guidance papers and toolkits. Box 1 offers a sample of websites, guidance papers and toolkits to explore further.

However, adaptive management brings additional challenges for monitoring and evaluating programmes as they need *intentional* M&E design from the start that is oriented towards both learning and accountability. While it may be argued that all development and humanitarian programmes should pay attention to ongoing reflection and learning, this does not always happen. What sets adaptive management apart – or, what it especially focuses on – is the aim of intentionally building in opportunities for structured and collective reflection, ongoing and real-time learning, course correction and decision-making *during* the implementation to improve the programme effectiveness and ultimately the impact.

This paper aims to build on the existing evidence base, highlighting the usefulness and relevance of a set of planning, M&E tools and approaches, especially for adaptive programmes with complex aspects, such as:

1. **involving innovation** (e.g. pilot programmes with limited evidence where the emphasis is on developing a solution)
2. **having uncertain pathways for change** (e.g. how change happens is unclear or contested)
3. **operating in uncertain or unstable environments** (e.g. post-conflict and fragile settings).

While not all adaptive programmes may fall under these categories, adaptive management is considered especially appropriate and useful for these types of programmes or contexts.[1] Thus, under each approach we will briefly discuss their relevance for the aforementioned three programme types.

The tools and approaches discussed in this working paper were chosen for their current or potential use in adaptive programmes. However, more testing and recording of practical examples is needed, especially for those approaches where the evidence base is currently limited. We are also aware that we have omitted many other methods and approaches that could support learning and decision-making in adaptive programmes. For example: most significant change (a participatory method) could be used for capturing programme participants' experiences; and qualitative comparative analysis (QCA) could be useful for portfolio-level adaptive management and so on. The aim of this working paper, however, is not to build an exhaustive M&E toolkit but instead to discuss a few tools with wider application potential.

Before discussing the methods in detail, there are four key points to clarify.

First, many of these approaches *overlap and build on each other*. While they all have distinct

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1   These categories, especially 1 and 2 can be somewhat overlapping and a programme can belong to more than one category. Likewise, not all programmes that belong to these categories are adaptive.

features, they often also often have much in common. In some cases, they may have been intentionally developed or refined by using aspects from other methods.

Second, these approaches can be and often are *combined with each other*. We include examples of these combinations in this paper.

Third, most of these approaches can be *applied in a participatory manner* (involving both programme staff and participants). We have not included specific participatory methods in this paper (although outcome mapping is often described as one). We recognise their importance in capturing participants' feedback and experiences, which is often one source of evidence for making iterations in adaptive programmes. Approaches such as developmental evaluation and outcome harvesting can be especially good at incorporating participatory methods, although other approaches can do this too.

Fourth, one of the most important principles in using any of these approaches is to *tailor them to the intended purpose*. For example, when we talk about applied political economy analysis (PEA) in this paper, we don't necessarily mean in-depth research undertaken by political scientists. While PEA can be useful for programmes – especially at inception – it is more common and relevant in adaptive programmes to apply principles of PEA in a more frequent and light-touch manner. This includes discussing and recording contextual and relational changes, e.g. on a monthly or sometimes even more frequent basis (see Box 2 for examples on using applied PEA in two flagship adaptive programmes). This applies to many of the methods discussed in this working paper; rarely are they applied 'by the book'.

1.1.1   Who is this working paper for?

This paper is primarily intended for M&E managers and advisers. Most M&E specialists are already well versed in different monitoring, evaluation and learning (MEL) tools and approaches. Therefore, the key focus here is on the potential usefulness and relevance of these tools and approaches to support adaptive management.

A secondary audience is programme designers. Given this audience, we briefly describe each method or approach to provide an overview of

the key aspects. We have aimed to make this concise and non-technical, avoiding unnecessary evaluation jargon. Within each overview, we include useful refences and/or examples for those who want to learn more.

1.2   Choosing appropriate tools and approaches for adaptive programmes

There is no shortage of potential MEL tools and approaches for development and humanitarian programmes. It is important to note that all the approaches introduced here can guide and support learning and adaptation – but in different ways and at different time-points. Moreover, whether the learning and adaptation actually happens depends also on factors other than the choice of MEL methods. These factors include:

- How approaches are applied in practice and tailored for the intended purposes.
- How data collection and analysis are designed to support reflection and learning.
- How this analysis and learning supports operational and/or strategic decision-making in programmes.

The degree to which this happens depends in turn on several other factors. Staff capacities and skills are critical and should include not just technical skills but also a propensity for curiosity, creativity, critical thinking and comfort with uncertainty. Other underlying factors include resources and time available, leadership and culture, and procurement and implementing mechanisms. Factors that can constrain and support adaptive management are discussed further in Wild and Ramalingam (2018).

However, selecting an appropriate and fit-for-purpose method or combination of methods for a programme is important and can be difficult. Each approach has its inherent strengths, weaknesses and requirements. Usually there is not one 'best' approach available but many can be useful. Key considerations are the level of usefulness, appropriateness and whether certain requirements are in place. The choice of methods or approaches depends on several things, including:

1. **Evidence and data needs:** what are the programme learning priorities, evaluation questions and accountability requirements? What kind of data is needed to make evidence-informed adaptations?
2. **Programme attributes:** what type of programme is it? How long does it run for? Do programme attributes align with the requirements that approaches may have?
3. **Resources available:** what resources (time and staff) are available for data collection, analysis, learning and decision-making?

Ultimately, the choice of MEL methods requires judgement, and no toolkit or guidance note can make a decision for a particular programme. However, by introducing a few selected M&E methods here, and describing their potential usefulness for adaptive programmes, we aim to help evaluation advisers and programme designers. By understanding different methods' orientations, comparative advantages and requirements, advisers and designers can better assess the suitability of particular methods for their programmes.

Table 1 summarises some of the key points of the selected nine tools and approaches, including what type of learning and evidence needs they tend to respond well to and when they are usually applied (or could be applied). Box 1 lists websites, tools and guidance papers that may be useful sources of further information on different M&E methods and approaches.

This working paper builds on previous GLAM papers, especially Hernandez et al. (2019), which presents a roadmap to strengthen and document evidence-informed adaptive management. This paper complements the roadmap outlined by Hernandez et al. (2019), and focuses on the important role of different MEL approaches in supporting course correction and iterative development during programme implementation.

Box 1 Toolkits and websites to support the choice of appropriate MEL tools and approaches

ALNAP's library of resources (www.alnap.org) on humanitarian evaluation, learning and performance includes over 17,000 resources related to adaptiveness, M&E, evidence, innovation, system change and engagement with affected people.

BetterEvaluation website (www.betterevaluation.org/en) is an international collaboration to improve evaluation practice and theory by sharing and generating information about options (methods or processes) and approaches. It provides descriptions and examples of 25 evaluation approaches and 16 themes.

Bond's tool for choosing appropriate evaluation methods (www.bond.org.uk/resources/ evaluation-methods-tool) is available as a spreadsheet, with an accompanying guide explaining how to use the tools and providing further information on the evaluation methods it covers.

INTRAC's M&E Universe (www.intrac.org/resources/me-universe) is an online resource that provides a series of short papers on different subjects related to M&E. It includes a dedicated section on complex methods of data collection and analysis.

IPA's Goldilocks toolkit (www.poverty-action.org/right-fit-evidence/toolkit) provides guidance, case studies and resources for designing, monitoring and evaluating social programmes, but also for collecting and storing data. The toolkit is meant to serve as a resource for learning and accountability for organisations of all sizes.

USAID Learning Lab (https://usaidlearninglab.org): this website includes toolkits for M&E and collaboration, learning and adaptation.

USAID Systems and Complexity White Paper (https://pdf.usaid.gov/pdf_docs/PA00M7QZ.pdf) provides an overview of tools and approaches supporting systems and complexity thinking.

Table 1 Overview of selected tools, methods and approaches

	What is this?	What type of learning and evidence needs is this usually appropriate for? (example questions)	When is this normally used?
Tools to support diagnosing and planning			
Applied political economy analysis (applied PEA)	**Diagnostic tool or method** to capture nuances and changes, e.g. in contexts, stakeholders, institutions, norms, power relations, incentives, relationships and other underlying issues that may affect the programme.	• How do institutions, power structures and economy work in a country/sector/area where the programme operates? How do these shape opportunities and challenges for the development? • What (political and socioeconomic) changes and dynamics are taking place (during the implementation)? • How to work within these structures or dynamics?	**Primarily:** in the beginning of the programme (usually more in-depth). **Potential wider use:** at regular intervals during the implementation, particularly during uncertain/turbulent periods in the external context (more light-touch).
Theory of change (ToC)	**Tool but also a process** to map a programme strategy, to capture how change is expected to happen and what the underlying assumptions are. Can also be used to help identify and update programme plans and indicators.	• How do we expect our activities and strategies to lead to changes we want to see? • What can enable and constrain this? • What needs to be in place for changes to happen? • What are our explicit and implicit assumptions?	**Primarily:** especially in the beginning of the programme but increasingly to structure learning and reflection at regular time-points during implementation; ToCs are often updated in adaptive programmes as programmes and/or context develops. **Potential wider use:** increasingly used as a basis for evaluation (especially in theory-based evaluations such as contribution analysis).
Scenario planning	**Tool** to map and plan different scenarios on how change may happen (depending on influential actors and factors), and to examine the programme's role in making future events happen.	• What is likely to happen given current trends? • What are different pathways to the outcomes we want to see? • What alternatives exist at each step to prevent, divert or facilitate the process to the outcomes we want to see? • How might influential events or other similar factors affect the programme success?	**Primarily:** not yet widely applied in development but could be useful either in the early phases of a programme or when a programme has a 'pause and reflect' phase, to orientate and prepare for future events.
Approaches to support (ongoing) decision-making during implementation			
Outcome mapping	**Planning and monitoring approach** to capture progress towards outcomes; often applied in a participatory manner.	• Who are the people or organisations on which the success of the programme depends? • How are our key partners and/or stakeholders responding to our programme and changing their behaviour, activities or relationships? • What types of outcomes are we observing over time across different stakeholder groups?	**Primarily:** throughout the programme, starting from the design phase. **Potential wider use:** to support evaluation (usually combined with other approaches or methods).

Table 1 Cont.

	What is this?	What type of learning and evidence needs is this usually appropriate for? (example questions)	When is this normally used?
Approaches to support (ongoing) decision-making during implementation			
Nimble RCTs (randomised controlled trials)	**Experimental method** for comparing and testing different activities and/ or strategies; requires a control group.	• How much observed change(s)/ outcome(s) can be attributed to the activity/strategy we have employed? • What (net) change is caused by activity A compared to activity B (or no activity)?	**Primarily:** during formative and piloting phase. **Potential wider use:** at specific time-points throughout the programme implementation.
Developmental evaluation	**Evaluation approach and orientation** geared towards programmatic learning and co-creation with an embedded evaluator; tends to utilise several methods.	• How do we respond and understand changes happening in the complex and emergent environment we operate in? • How do we learn from what we do?	**Primarily:** throughout the implementation.
Approaches to support causal analysis at specific time-points			
Outcome harvesting	**'Objective-free' exploratory evaluation approach** to capture a variety of outcomes, including unintended ones.	• What changes – both positive and negative, and intended and unintended – is the programme contributing to, and how?	**Primarily:** at the end of the programme. **Potential wider use:** can be used at regular time-points during the implementation (e.g. annually).
Contribution analysis	**Theory-based 'confirmatory' evaluation approach** to understand a programme's contribution to observed changes by building and verifying the programme's 'contribution story'.	• Has the programme made (an important) contribution to the observed result? Why has the result occurred? • How and why did the programme make a difference, if any? • What was the process/mechanisms by which the programme contributed to observed outcomes?	**Primarily:** at the end of the programme. **Potential wider use:** at the mid-term, especially in long-term programmes.
Process tracing	**Theory-based 'confirmatory' evaluation approach** to assess causal change by developing alternative hypotheses and using formal probability tests to assess the strength of evidence.	• How and why did the intervention make a difference, if any? • What were the processes/mechanisms by which the intervention led to or contributed to outcomes?	**Primarily:** at the end of the programme. **Potential wider use:** at the mid-term, especially in long-term programmes.

2 Tools and approaches to support adaptive management

There are several ways to categorise MEL approaches – what is done in this working paper is just one of many. Instead of dividing approaches to participatory approaches, systems approaches, theory-based approaches and so on, we have *categorised them by tasks or purposes* that specific tools and approaches can be used for. It is worth noting that one approach can support several tasks (for example, outcome mapping can be used for planning or monitoring, but also to support evaluation) but we have parked them under what can be seen as their 'primary' purpose or task. Three main categories are:

1. Tools to support diagnosing and planning.
2. Approaches to support (ongoing) decision-making during implementation.
3. Approaches to support causal analysis at specific time-points.

2.1 Tools to support diagnosing and planning

2.1.1 Applied political economy analysis

What is this?
Applied political economy analysis (PEA) is a tool or approach to investigate and analyse factors and actors that may have an effect on programme implementation and can explain why things work out the way they do. Among other things, PEAs tend to examine social and economic structures, formal and informal institutions and power relations ('rules of the game'), cultural norms, stakeholders and their ideas, interests, incentives and influence potential (DFID, 2014; Rocha Menocal, 2014; USAID, 2018).

There are different approaches and styles of PEA. For example, problem-driven PEA uses as a starting point a specific, unresolved development issue or opportunity that a programme wants to address (Fritz et al., 2014).[2] Some advocate applying stronger gender lenses to PEA (Haines and O'Neil, 2018). These perspectives are of course not mutually exclusive. While conducting a standard, in-depth PEA can take weeks or months, and is usually done by researchers, adaptive programmes often choose to use PEA in a more applied and regular manner.

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2   Problem-driven PEA is closely linked to problem-driven iterative adaptation (PDIA) (see, for example, https://bsc.cid.harvard.edu/PDIAtoolkit).

How can applied political economy analysis be useful for adaptive programmes?

Applied PEA can help (adaptive) programmes to think politically.[3] Collecting information on socioeconomic and political developments (e.g. from expert interviews, news, media and research studies) can facilitate regular reflection and analysis among programme teams on what such developments mean for the programmes. This has implications for how teams should revise or iterate their activities, strategies and Theories of Change (ToC). Triangulating information and including people with a range of perspectives are seen to improve the quality of PEA (DFID, 2014). In practice, in many adaptive programmes, the staff is responsible for conducting applied PEA and sometimes it can be as simple as asking a few (systematic) questions of the recent changes in relationships between important stakeholders or in socioeconomic context, and then analysing in team meetings what those changes mean for the programme.[4]

Some applied PEA approaches may be too 'light-touch' to be particularly useful for programmes. For example, when piloting PEA in its 10 country programmes, CARE found out that the focus tended to be on formal institutions and there was a need for more nuanced analysis on informal relationships and processes, which are typically harder to capture (Aston, 2015). Thus, it is important to test and tailor PEA to respond to programme needs. Moreover, if a programme decides to conduct PEAs internally, it may be worthwhile to involve external people (such as experts or people who know the context well) to give an additional, critical perspective. Box 2 outlines examples of using applied PEA in two flagship adaptive programmes and Table 2 describes why applied PEA can be useful in adaptive programmes with complex aspects.

Table 2   Why use applied political economy analysis?

Subset or type of adaptive programme	Why this tool can be useful
1) Innovative (with limited evidence)	Understanding relationships, dynamics and context where the programme operates can explain why a new service or solution works the way it does (or does not) work. However, typically (but depending on the type of innovation the programme is working on), programmes that aim to develop new solutions for a problem may benefit more from a problem analysis or from doing research on user needs.
2) Have uncertain or contested pathways for change	Especially if a programme with uncertain or contested change pathways operates in multiple locations or countries, it is important to understand differences in the socioeconomic and political environment and how developments in the context may influence the programme. Applied PEA can also increase a team's common understanding how change may happen and what external factors can have an effect on it.
3) Operate in uncertain or unstable environment	Understanding opportunities and barriers for policy reforms, and a programme's role to support those reforms, is essential in fragile and conflict-affected contexts where the challenge of building stable societies is fundamentally political (DFID, 2014).

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3   Thinking and working politically (TWP) is an 'orientation' in the international development community and can be understood as a 'way of thinking and working that keeps the understanding that everything is political front and centre' (Marquette, 2019). TWP has an explicit focus on political economy contexts.

4   For example, the DLP programme has designed 'everyday political analysis' as a 'stripped-back political analysis framework designed to help frontline development practitioners make quick but politically-informed decisions' (Hudson et al., 2016). The framework has two steps: understanding interests and understanding change. Both sections have standard questions such as 'Is what they want clear?', 'Do you understand the constraints they face' and 'Are their key decision points clear?'

2.1.2   Theory of change

What is this?
ToC (theory of change or programme theory) is often understood as a foundational element or 'backbone' of any programme. It can be seen as a tool but also as a process for monitoring and learning, strategic planning and mapping change pathways. One of the key elements of ToC, on top of hypothesising and mapping how planned activities and strategies may lead to desired outcomes (and ultimately impact), is to make initial programme assumptions explicit and then, consequently, to test and revise those assumptions during a programme.[5]

How can theory of change be useful for adaptive programmes?
ToC is most useful for adaptive programmes when it is regularly updated and reflected on throughout the programme implementation. This is because assumptions regarding the conditions, behaviours or critical events do not necessarily hold true throughout the lifetime of a programme (USAID, 2018). Too often, ToC is treated as only a one-off exercise for a design or interception phase. To bring most value and to facilitate learning, the underlying assumptions and theories of how change is expected to happen should be critically reviewed and revisited. In practice, this often happens annually within longer-term adaptive programmes but reviews could also take place more frequently, such as during a piloting phase.

   It is worth noting that in adaptive programmes ultimate outcomes can remain the same while assumptions, strategies and pathways to the outcomes are updated when the context changes or when more understanding or new information emerges. For example, USAID (2018) recommends defining a problem initially in a way that defines

5   Morell (2018) provides an interesting analysis on implicit assumptions (www.crs.org/sites/default/files/report_revealing_assumptions.pdf).

higher-level outcomes but leaving lower-level outcomes either undefined or illustrative, to allow iteration during the implementation. In a similar vein, El Bcheraoui et al. (2018) argue that adaptive ToCs often start with a relatively simple framework (given the lack of evidence on how change is likely to happen) and gradually become more comprehensive, including different pathways, assumptions and causal feedback loops

Table 3 looks at how ToC can be useful in adaptive programmes with complex aspects and Box 3 presents an example of how updating ToC was useful for a five-year programme in Nepal. Another example of using ToC on a regular basis can be found later in section 2.3, which describes how programmes supported by Christian Aid Ireland have combined ToC with outcome harvesting to structure annual strategy testing.

Table 3   Why use theory of change?

Subset or type of adaptive programme	Why this tool can be useful
1) Innovative (with limited evidence)	Can support the mapping of initial thinking, including potential change pathways and uncovering implicit assumptions. It is very important to update as evidence accumulates.
2) Have uncertain or contested pathways for change	Can help map varied or contested pathways to change, and to update and restructure a team's thinking as a programme develops. Can also be used to achieve agreement between contested ideas or support experimentation between strategies.
3) Operate in uncertain or unstable environment	Further to the above, can help to clarify and understand assumptions and restrictions related to an uncertain and complex environment.

Box 3   Using theory of change to improve implementation through review and revision

The Sustainable Action for Resilience and Food Security (Sabal) programme in Nepal had been operating for two years when the Sabal team felt that a collaborative review and restructuring of Sabal's ToC would help the team to reflect on contextual and operational changes. During the programme's operations, these changes had included a devastating earthquake, budget cuts and a major administrative restructuring of the Government of Nepal. The review was intended to allow staff to apply learning from the programme's monitoring data and mid-term evaluation results.

Sabal organised two workshops for staff members from district, central and headquarters levels to analyse evidence, review mid-term evaluation findings, test previous ToC links and assumptions, and adapt the programme's implementation design and approach accordingly. At the beginning of the revision process, many staff members felt that the ToC was a burdensome donor requirement, separate from field-level programme implementation.

After the workshops, the mindset had significantly changed, as the ToC revision helped the team visualise the many contextual and operational changes that had taken place, and adapt components of implementation based on these changes and new evidence. There was increased staff ownership and understanding of the ToC as a living project tool for improving implementation. As a result of the revision process, Sabal has shifted its implementation to improve integration and layering of livelihoods, health and nutrition, and disaster risk reduction and climate change adaptation activities, to enhance resilience outcomes.

Source: Sharma et al. (2018).

based on emerging evidence over time.

2.1.3 Scenario planning

What is this?

Scenarios can be understood as plausible stories that help programmes to understand cause and effect relationships between current conditions and trends and future outcomes in the context of uncertainty. In doing so they can illustrate a programme's role in making future events happen or not happen. The assumed or anticipated future is constructed by introducing and discussing a set of factors and actors that are likely to affect the current situation. These factors can be joined together in different ways to form a different set of plausible and coherent stories (Young et al., 2019).

Scenario planning is not necessarily about 'predicting' the future as such. Building scenarios can also be about anticipating, tracking and preparing for changes with significant potential to affect a programme and its outcomes. According to the starting points (present or future) and the purpose, Börjeson et al. (2006) describe three different approaches to scenarios:

1. predictive scenarios that investigate what is likely to happen given current trends
2. exploratory scenarios that aim to explore what can happen
3. normative scenarios that start from a desired future or target and then examine how to reach it.

How can scenario planning be useful for adaptive programmes?

Scenario building is one of the most widely used 'futures tools' for helping decision-makers think about a range of plausible futures (Bengston et al., 2012). However, its use is not widespread within development and humanitarian programmes, although it is increasing.[6] Its key advantage lies in constructing and preparing for multiple possible scenarios, not just one anticipated pathway for the future. While scenario planning can be used in individual programmes, it may be especially beneficial for portfolios or country strategies. According to Bengston et al. (2012), the output of scenarios (typically a set of stories) can represent a range of plausible futures to help decision-makers to 'build adaptive capacity to make their systems more resilient to change by preparing for a diverse set of alternatives' (ibid.: 5).

Some argue that creating scenarios can improve financial performance, while others think that the real added value of scenario planning is the discussion of the consequences (Phelps et al., 2001; Miller and Cardinal, 1994). With complex (or 'wicked') development problems, where the responsibilities are not clear and where siloed approaches to problem-solving do not work, participating stakeholders in scenario planning, by imagining plausible futures, can begin to see their own roles and responsibilities and how they relate to the bigger picture. This in turn can help to generate ideas for new ways of working. In addition to supporting critical thinking, scenario planning can benefit programme M&E design by informing which context indicators the programme should monitor. This in turn can increase understanding of which scenario is becoming more plausible.

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6   In USAID's discussion note on adaptive management (USAID, 2018), scenario planning is mentioned as one of the approaches to support strategic planning and implementation. However, among the USAID CLA case studies, only 9 of 258 (3.5%) reported using scenario planning (https://usaidlearninglab.org/cla-cases).

Table 4 Why use scenario planning?

Subset or type of adaptive programme	Why this tool can be useful
1) Innovative (with limited evidence)	In innovative programmes, the desired programme goal may be clear but there is necessarily limited evidence of whether the programme will work (and how). In these cases, creating a set of scenarios can help to design a range of programme strategies to be tested and tracked.
2) Have uncertain or contested pathways for change	If it is unclear or contested (among programme staff and stakeholders) how change happens, scenario planning can help to achieve common vision and buy-in. It can also generate ideas for new ways of working, and can support a programme to prepare and address changes in context.
3) Operate in uncertain or unstable environment	Scenario planning is potentially most useful in uncertain contexts where major events or changes take place, resulting in major implications for the programme (e.g. elections or treaties between conflict partners). As the programme has no control over these events it is helpful to prepare for different scenarios while maintaining the same long-term vision. As above, scenario planning can support buy-in and vision, and can strengthen cooperation and coordination in a humanitarian or post-conflict setting.

Box 4 Using scenario planning to think long-term in a volatile environment

Operating in a rapidly changing conflict environment, in which it is challenging to remain relevant and effective, the Syria Regional Program (SRP) used several adaptive learning methods. One of the approaches SRP tested was predicting the most likely course of events with scenario planning. For example, Eastern Ghouta has been besieged since 2013 although goods enter through irregular shipments and smuggling. This resulted in monopolisation and exploitation, and lack of long-term food security. SRP created several scenario-based risk-mitigation activities to enable local councils to grow additional wheat for stock piling. Other scenarios helped SRP to prepare for potential truce negotiations.

SRP recommendations on using scenario planning include the importance of long-term thinking. Although this may seem unrealistic for a volatile environment like Syria, intended outcomes often take time to be achieved and this requires a degree of consistency: 'Incorporating scenario planning as a first step, the goal should be to define a long-term vision whose spirit can remain the same, even if approach changes to adapt to the developments on the ground' (Efe, 2017: 5). In this way, a programme can avoid repeatedly starting from the beginning. According to SRP, scenario planning can also support building sustainable relationships with partner organisations and communities, which are needed to reach the desired outcomes.

Source: Efe (2017).

2.2 Approaches to support (ongoing) decision-making during implementation

2.2.1 Outcome mapping

What is this?

Outcome mapping is a methodology that uses a systemic approach for planning and monitoring. This method is typically used to capture outcomes that are 'hard to measure' such as policy influence, female empowerment or capacity building. It starts by recognising that a change can be complex, cumulative and often beyond the control of the programme team. The distinguishing feature of outcome mapping is its use of 'progress markers' as types of outcomes for identified key stakeholder groups. Intended changes – in behaviour, action, relationships or policies – are articulated as 'expect to see', 'like to see' or 'love to see' outcomes. This does not mean the changes are expected to be linear; rather, these categories indicate the depth or level of change. The team then collects observations on changes (what happened, where and when), including a description of how the programme contributed to these changes. The key thing in outcome mapping is to capture and reflect the progress towards a long-term, sustainable change that may not necessarily happen during the lifetime of a programme.

How can outcome mapping be useful for adaptive programmes?

Outcome mapping is considered particularly useful for measuring and understanding complex social and institutional change. It can support adaptive management by providing evidence for ongoing decision-making on how a programme is moving (or not moving) towards intended outcomes, and how different stakeholder groups are responding to an intervention. Moreover, it is intended to be applied in a participatory manner to facilitate programmatic learning and reflection. To conduct a 'full-on' outcome mapping involves several steps and can be time- and resource-intensive (for a detailed description of the steps, see Earl et al. (2001)). It also tends to require skilled facilitation and ongoing support for the programme.

In practice, many programmes apply outcome mapping in a more light-touch manner, focusing mainly on defining outcomes and collecting observations for regular (e.g. annual or biannual) reflection. Table 5 explains why outcome mapping can be useful in adaptive programmes with complex aspects and Box 5 presents an example of outcome mapping at work in monitoring stakeholder engagement, and a mixed-method approach is included on the Chukua Hatua programme in subsection 2.3.3.

Table 5   Why use outcome mapping?

Subset or type of adaptive programme	Why this approach can be useful
1) Innovative (with limited evidence)	Outcome mapping focuses data collection on what matters for understanding progress, which in an innovative programme is necessary in quick cycles. It also creates spaces for joint understanding and reflection on progress with others involved.
2) Have uncertain or contested pathways for change	Outcome mapping recognises that there may be several pathways leading to intended outcomes. Thus, it can track and understand several and different types of changes taking place among different key partners or stakeholder groups (i.e. each group may react differently to a programme).
3) Operate in uncertain or unstable environment	Outcome mapping is designed to be flexible, so if the context changes then the programme can easily adjust its strategies and even its intended outcomes.

Box 5   Using outcome mapping to amend approaches to stakeholder engagement in a climate change research consortium

Pathways to Resilience in Semi-arid Economies (PRISE) was a five-year, multi-country, multi-project and multi-partner research consortium on climate resilience. Building on outcome mapping, it created a system to continuously capture, analyse and understand changes in stakeholder behaviour and actions around the research activities and results, and how these changes can ultimately lead to sustained shifts in policy and practice.

In PRISE, researchers and M&E focal points took on the responsibility to observe changes in the behaviour of stakeholders they were regularly in contact with. They recorded these changes in the project's outcome monitoring system (a simple, Google-based tool). This required the research programme to build researcher capacity, providing coaching and training on how to use the outcome mapping system, and ensuring that researchers actively participated in reflection sessions held on data captured.

An important part of the monitoring and learning system were biannual 'sense-making' sessions in which PRISE M&E focal points and researchers examined the collected data on stakeholder behaviour. This gave research teams the opportunity to reflect on how stakeholders were engaging with the research evidence PRISE had generated. It also allowed them to make any necessary adjustments to their stakeholder engagement strategies throughout the programme implementation.

Source: Pasanen et al. (2018).

2.2.2   Nimble randomised controlled trials

What is this?
Nimble randomised controlled trials (RCTs) are an application of standard RCTs with the aim of experimental learning and testing variations of programme strategies or operations. While standard RCTs typically focus on measuring impact (which usually takes longer to appear), nimble RCTs (also called rapid-fire testing) focus on short-term or initial outcomes such as enrolment or attendance rates, or product uptake. For this, a programme needs to have good monitoring or administrative data and big enough sample sizes to calculate differences between groups, as well as a programme or service that can be varied (IPA, 2016; Karlan, 2017).

Nimble RCTs can be considered a part of 'nimble evaluations', a term used by the Strategic Impact Evaluation Fund (SIEF), funded by DFID and the Children's Investment Fund Foundation (CIFF). SIEF defines nimble evaluations as rapid, low-cost evaluations that produce robust and actionable evidence to inform scale-up or adaptation of an intervention using RCTs or quasi-experiments and capitalise on sets of data collected by programmes or national data systems. Nimble evaluations are focused on changes that you would expect to see within a year (or less) of the intervention starting (see example in Box 6).[7]

How can nimble RCTs be useful for adaptive programmes?
Nimble evaluations are a new but increasingly used tool in international development (see Table 6). For example, the World Bank's Development Impact Evaluation (DIME) programme is increasingly exploring how adaptive experimentation involving sequential experimentation to address constraints identified through theory or empirical approaches can support programme decision-making and adaptation. DIME's experiments vary in their duration. Early-stage experiments aim for a quick turnaround to provide immediate knowledge inputs for adaptive decision-making which brings the programme closer to the end-goal. Some projects also involve sequential

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7   More information: www.worldbank.org/en/programs/sief-trust-fund/brief/nimble-summaries

experimentation that may look at longer-term outcomes or even programme follow-up.[8]

According to Karlan (2017), nimble RCTs can help adapt an evidence-backed programme to a new context or with a different population, and can improve programme design though effective tweaks. However, if a programme seeks to understand what causes the differences in uptake or usage of their product or service, it may be necessary to combine nimble RCTs with other approaches to explore 'how' and 'why' questions.

Table 6   Why use nimble randomised controlled trials?

Subset or type of adaptive programme	Why this approach can be useful
1) Innovative (with limited evidence)	Can be helpful in gaining information about scaling up an intervention, or parts of one, especially in the piloting phase. In practice, nimble RCTs usually support a modification to an existing product (Karlan, 2017).
2) Have uncertain or contested pathways for change	Can be used for rigorous testing of which strategy or strategies work best compared to others, generating robust evidence to test assumptions about uptake or usage.
3) Operate in uncertain or unstable environment	Can help in gaining understanding of which variations of a programme work in which contexts. Having good-quality monitoring or administrative data is often a challenge in uncertain settings, however, so nimble RCTs may not always be feasible. While RCTs may not always be appropriate for fragile settings (e.g. in cases of randomising emergency aid), they can focus on sequencing a service or testing different operations in different settings. This would not involve withdrawing aid from any group.

Box 6   A nimble randomised controlled trial of farming support in India

A nimble RCT was conducted in Telangana State, India, within a new state programme called Rythu Bandhu ('Friend of the Farmer'). The programme gave farmers 4,000 rupees (about $55) per acre, before the summer and the winter planting seasons, to buy seeds, fertiliser and pesticides. In practice, this meant delivering cheques to 5.7 million farmers within a month. The evidence from other similar interventions had revealed that transfers did not always reach the farmers. Therefore, the evaluation team designed a simple RCT to collect information on how the programme was working, with the aim of improving delivery.

A part of this process, the government created a call centre that telephoned farmers in a randomly selected set of jurisdictions to monitor whether they had received their cheques or had any problems (e.g. if they were asked for a bribe). The officials responsible for delivering cheques in those areas were told that their performance would be monitored through these phone calls.

Comparing two groups of farmers revealed that, when officials knew they were being monitored, farmers were more likely to get their cheques: 84.3% of farmers in the monitored group received their cheque, compared with 83% in the unmonitored group. The difference of 1.3 percentage points is not big as such but translates into an additional 17,000 farmers receiving transfers and $1 million reaching farmers due to phone-call monitoring. The programme was also considered to be highly cost-effective. The cost-per-dollar of benefits delivered to beneficiaries was 3.6 cents, which is very low for any anti-poverty programme and a fraction of the money that reached the right farmers because of the monitoring.

Given the good results, Telangana State is interested in using this method to monitor other programmes, such as bringing piped water to more communities. The evaluation team is investigating possibilities for expanding the use of phone monitoring to other states.

Source: Muralidharan et al. (2019).

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8   For more information, see www.worldbank.org/en/research/dime

2.2.3 Developmental evaluation

What is this?
Developmental evaluation is an evaluation approach (or orientation) to facilitate ongoing reflection, co-creation and adaptation. It is considered especially useful for complex and uncertain programmes (as described in Box 7). Developmental evaluation aims to generate understanding about the programme, and its environment and effects, and to support innovation and further development of the programme. What differentiates it from many other real-time monitoring or evaluation approaches is that developmental evaluation involves embedding an evaluator within a programme team for a long-term collaboration. The evaluator provides real-time (or close to real-time) feedback for the programme staff, highlights emerging findings, supports programmatic learning and documents programme adaptations and rationale for changes (Patton, 2006; 2010). Developmental evaluation is highly flexible and does not include detailed design or methodology as such. In practice, developmental evaluations use combinations of different methods for data collection and analysis.

How can developmental evaluation be useful for adaptive programmes?
Developmental evaluation is well suited to adaptive programmes as it is geared towards learning and iteration during the lifetime of a programme. According to Dillon (2019), developmental evaluation supports adaptation in three different ways:

1. responding to adaptation, by allowing for iterative development of evaluation frameworks and methods alongside project implementation
2. supporting adaptation, by embedding evaluators alongside project teams and facilitating frequent reflection on programme delivery and relevance
3. evaluating adaptation, by recording the reasons for decisions made and, if required, assessing their appropriateness.

Development evaluation is considered helpful for framing concepts, testing quick iterations, tracking developments and surfacing issues – all of which are essential in adaptive programmes. However, it is not suitable for every situation (Patton, 2010). It may require substantial time investments from the programme team, and the relationship and degree of trust between the evaluator and programme team are crucial. If the evaluator is not seen as a partner, the usefulness of developmental evaluation is likely to be limited (Dozois et al., 2010). Table 7 outlines the potential use of developmental evaluation in programmes with complex aspects.

Table 7   Why use developmental evaluation?

Subset or type of adaptive programme	Why this approach can be useful
1) Innovative (with limited evidence)	Development evaluation is very suited to this type of programme as the evaluator becomes part of the team, embedding the data collection, analysis and judgement functions normally associated with end-evaluations into the development of innovation. It can support innovation and learning, especially when outcomes are unclear and theories of change untested.
2) Have uncertain or contested pathways for change	Can support collective interpretation and sense-making of merging findings, which is helpful if the pathways to outcomes are unclear or contested.
3) Operate in uncertain or unstable environment	By design, development evaluations are geared towards changing environments and activities and can provide ongoing real-time feedback for programmes. However, development evaluations can be time-consuming for programme staff and, in a volatile environment, time for ongoing, collective learning may be limited.

2.3   Approaches to support causal analysis at specific time-points

2.3.1   Outcome harvesting

What is this?
Outcome harvesting can be considered as an 'indicator- or objective-free' evaluation approach, as it does not rely on or measure progress towards predetermined logic model or objectives. This 'exploratory' orientation is often considered to be the key advantage of this approach. Outcome harvesting first collects (or 'harvests') evidence on what has happened, using a range of methods. This focuses on observable outcomes such as changes in actions, relationships, policies or practices. Next, outcome harvesting works backwards to determine and verify whether and how a programme has contributed to these changes.

The outcomes can be positive or negative, and intended or unintended, as long as the connection between the programme and the outcomes is plausible. The outcomes are written in short narratives in a particular manner to keep the process systematic. They typically include: description (what has changed), significance (the relevance of the change) and contribution (how the programme has contributed to the change). Because of the brief nature of the outcome narratives, it is possible to collect a large number over the lifetime of a programme (Wilson-Grau, 2015).

How can outcome harvesting be useful for adaptive programmes?
While outcome harvesting is about determining a programme's contribution to observed outcomes, it is geared towards learning – as in analysing and interpreting evidence with programme staff, partners and other stakeholders. It is considered to be especially useful in dynamic, uncertain and complex situations when outcomes (or sometimes even activities or outputs) are not sufficiently specific or measurable at the programme design phase, or when relations of cause and effect are not fully understood, such as in innovative programmes (see Table 8).

Outcome harvesting is typically used in final or mid-term evaluations but it can also support adaptive programmes on a more regular basis and in combination with other approaches. Box 8 presents an example of using outcome harvesting together with ToC to support annual strategy testing.[9] To reduce potentially significant time requirements needed from partners and informants, outcomes can be harvested more regularly (e.g. monthly or quarterly) but substantiated and analysed less frequently.

Table 8   Why use outcome harvesting?

Subset or type of adaptive programme	Why this approach can be useful
1) Innovative (with limited evidence)	In innovative programmes, it is often not certain what type of outcomes (or even outputs) may emerge. This means there may be no clear plan of what to look out for and measure. Thus, outcome harvesting is especially useful for testing ideas and harvesting a range of outcomes.
2) Have uncertain or contested pathways for change	As outcome harvesting does not rely on predetermined logic models, it can capture a range of outcomes in situations where cause and effect, and the significance of outcomes, are not fully understood. In these cases, there is a strong need for learning that outcome harvesting can support.
3) Operate in uncertain or unstable environment	In complex environments, objectives and the pathways to achieve them are largely unpredictable. Outcome harvesting is believed to be particularly useful in more dynamic and uncertain environments where unintended (and potentially negative) outcomes may dominate (Wilson-Grau, 2015).

Box 8   Combining outcome harvesting and theory of change

Christian Aid Ireland's Governance and Human Rights programme operates in several partner countries. It was redesigned in 2017, with a central role for adaptive management. By combining different tools and approaches – including ToC, strategy testing and outcome harvesting – the organisation designed an overarching approach that helped country teams to use multiple sources of evidence and reflect changes systematically. While the programmes also collected information on the context (such as ministerial changes or outbreaks of political violence) and feedback from communities, outcome harvesting focused on outcome-level changes.

The outcome observations (both positive and negative) were collected for annual or biannual strategy testing. The key issue was to substantiate and verify the programme's contribution to observed changes, such as through media reports, informant interviews or focus group discussions. After outcomes were verified, they were logged and used as evidence for analysis and reflection during strategy-testing workshops. Interestingly, the workshops started by analysing and discussing the significance of changes (using the scale of 1–5), and only later were the changes mapped against the ToC to test whether it and the assumptions held true. This was done to keep conversation open and avoid being 'locked' into the existing ToC thinking from the start. While the main aim of the new approach is reflection and learning, strategy testing also feeds into annual reporting.

Source: Booth et al. (2018).

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9   For more examples, see https://outcomeharvesting.net/

2.3.2 Contribution analysis

What is this?

Contribution analysis is a theory-based evaluation approach for assessing cause and effect by building and verifying a programme's 'contribution story'. While outcome mapping and outcome harvesting, for example, are more exploratory approaches, contribution analysis is more confirmatory in that it tests identified programme hypotheses. Contribution analysis helps to assess whether and why intended outcomes happened (or did not happen), a programme's role in observed changes, and what other factors might have influenced the changes.

Rather than being a detailed methodology, contribution analysis is more of a general framework with broad steps for critical thinking (Mayne, 2008). These steps are:

1. set out the attribution problem to be addressed
2. develop a ToC and identify the risks for it
3. gather the evidence on the ToC
4. assemble and assess the contribution story and challenges to it
5. seek out additional evidence
6. revise and strengthen the contribution story.

In practice, evaluations applying contribution analysis use ToC as their starting point, with several methods of data collection and analysis to triangulate and verify the contribution story.

How can contribution analysis be useful for adaptive programmes?

Contribution analysis is most useful with a relatively clearly articulated ToC, and where there is not much scope for varying how a programme is implemented (Mayne, 2008). This may not fit many adaptive programmes, in which different strategies are tested and a programme may be implemented and adapted in different ways in different contexts. Moreover, like most evaluation approaches aiming to capture causal relationships, contribution analysis can be time intensive. However, it may be useful for critically assessing the relevance and accuracy of an existing ToC (e.g. in a mid-term evaluation) and so can support its revision in a more robust manner.

As contribution analysis is considered to be particularly useful for analysing and learning about different programme mechanisms and processes influencing observed outcomes, programmes with complex elements may benefit from it. However, as contribution analysis expects change processes to appear in a certain manner, it may have to be combined with more systems- or complexity-sensitive methods (Annex 1) to capture dynamic change processes. Table 9 summarises the potential of contribution analysis in adaptive programmes with complex aspects.

Table 9   Why use contribution analysis?

Subset or type of adaptive programme	Why this approach can be useful
1) Innovative (with limited evidence)	Can be used to verify an initial ToC to understand whether the innovative or pilot programme is operating as anticipated. It can be useful to combine contribution analysis with 'objective-free' approaches to capture a range of outcomes (including negative and unintended), not only those initially anticipated.
2) Have uncertain or contested pathways for change	Can help programmes with uncertain or contested pathways to address questions on the processes and mechanisms by which an intervention contributed to observed outcomes. However, for these types of programmes, contribution analysis may need to be combined with more systems- or complexity-sensitive methods to capture the non-linear dynamics of change.
3) Operate in uncertain or unstable environment	Contribution analysis involves understanding contextual influences and their role in observed outcomes. This may be especially important for programmes operating in uncertain environments.

2.3.3 Process tracing

What is this?
Process tracing is a theory-based evaluation approach used to assess causal change. It seeks to draw causal links between cause and effect, and to explain in a rigorous manner why and how the programme led or contributed to observed outcomes. Like contribution analysis, process tracing is a confirmatory approach. What sets process tracing apart is the building of alternative and additional hypotheses to explain change, and the use of four formal probability tests to assess the strength of the evidence.[10] These tests should be used as guidelines to help with the collection and analysis of the evidence (Punton and Welle, 2015; Befani et al., 2016).

How can process tracing be useful for adaptive programmes?
Process tracing can support a programme team's understanding of how and why an intervention did or did not succeed. Moreover, it can help the programme team to critically reflect the strength of evidence, something that not all M&E methods explicitly require but which can address some of the biases related to evidence or prior perceptions. However, collecting a sufficient amount of evidence for several hypotheses can be time intensive. Thus, process tracing is typically conducted as a final evaluation, when it cannot help with course correction and adaptation. However, there are cases in which process tracing has been used at the programme mid-point too; Box 9 outlines an example of this for Oxfam's Chukua Hatua programme.

While the use of process tracing in international development is still limited (Punton and Welle, 2015), there is wider potential to apply its principles and combine it with other approaches. For example, other (theory-based) approaches that construct qualitative contribution (or impact) statements could often benefit from more systematic and transparent assessment of the strength of evidence. Box 9 presents two examples of process tracing in combination with other methods, and Table 10 looks at the potential of process tracing in adaptive programmes with complex aspects.

Table 10   Why use process tracing?

Subset or type of adaptive programme	Why this approach can be useful
1) Innovative (with limited evidence)	Process tracing requires a substantial amount of evidence and the outcome needs to be fully known (observable), which may not always be the case with innovative programmes. Therefore, process tracing may not be the best choice here without other complementary approaches.
2) Have uncertain or contested pathways for change	Can be useful in interventions where pathways to change are uncertain and the programme is interested in finding out how and why it did or did not work.
3) Operate in uncertain or unstable environment	Process tracing can be used in complex settings, if there is sufficient information available to test hypotheses. Given the volatile nature of fragile and uncertain settings, it may not always be the best choice to help with real-time learning, although it does have potential in a mid-term or final evaluation.

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10 These tests are called: (1) Straw in the Wind; (2) Hoop Test; (3) Smoking Gun Test; (4) Doubly Decisive Test. The tests are classified based on two criteria: whether passing the test is necessary and sufficient to establish a causal connection.

Box 9   Combining process tracing with other methods in Tanzania and Uganda

Case A: Testing effectiveness of the Chukua Hatua governance programme, Tanzania

The Chukua Hatua (CH) is a five-year Oxfam governance and accountability initiative to strengthen civil society in Tanzania. For its mid-term evaluation, the programme team decided to use process tracing in combination with outcome harvesting. These two approaches were chosen for their perceived complementarity and because the programme already used outcome mapping (closely related to outcome harvesting) as their monitoring approach to assess progress towards changes in behaviour, relationships, policies, activities and actions. The evaluation team tested three outcomes and looked at the significance of CH's contribution to the changes. They found evidence that each outcome had materialised (fully in two cases and partly in one). They also found that CH had made a crucial contribution to each outcome, that would not have occurred without CH, but that there were other contributing factors that influenced the outcomes. Interestingly, the evaluation also unearthed two negative outcomes, which is something that many evaluations do not investigate. Rather than giving specific recommendations, the evaluators provided 'recommended points for discussion' for CH, to help it shape the programme in its final years.

Source: Smith and Kishekya (2013).

Case B: Assessing policy influence of the Uganda Poverty and Conservation Learning Group (U-PCLG)

The U-PCLG wanted to test its influence over a particular decision of the Uganda Wildlife Authority regarding park fees. The evaluation team started by articulating two specific, relatively simple hypotheses, concerning whether the network had influenced the decision to increase the amount of the gorilla tourist permit fee that went to the local community. Next, the contribution claims were articulated as a step-by-step process. Then, the team used process tracing and Bayesian updating[i] to assess validity. The evidence came from multiple sources, including interviews, meeting minutes, other documents and emails, to show the existence of various steps in the process. The team assessed the strength (or the probative value) of each piece of evidence, which helped to determine its significance for confirming or rejecting particular steps of the contribution claim. According to the evaluation team, this process enabled a close dialogue between theory and evidence, gave new information on the importance of community pressure as a complementary contributing factor (that was not fully understood at the start of the evaluation) and also helped to rule out two rival explanations.

Source: Befani et al. (2016).

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i   Befani et al. (2016) describe Bayesian updating in the following way: 'Bayesian updating is used to measure confidence in a claim about cause and effect, and update it according to the relevance of emerging new knowledge or evidence. Establishing prior and posterior probabilities is central to Bayesian updating, as is the estimation of the probative value of given pieces of evidence.' (ibid.: 2).

3   Future research

The aim of this working paper is to briefly present a selected set of M&E tools and approaches, and to discuss how they can potentially support adaptive management. Use of these methods alone does not guarantee adaptive management but each method has potential to support learning and adaptation, although in different ways and at different time-points. Some tools are geared more towards supporting strategic planning and diagnosing, especially in the inception phase, while others are more helpful for analysing causal relationships at specific time-points, such as at mid-term.

For some of these approaches, a considerable body of evidence already exists but, for many, more practical examples and systematic analysis is needed. Thus, more testing and recording of the use of different tools and approaches, both individually and in different combinations, is required. It is important to understand not only whether they can support learning and adaptation in general, but also whether they are more suited for certain types of adaptive programmes, and what else needs to be in place (such as enabling-environment conditions) in order for them to facilitate and strengthen evaluative thinking, evidence-informed decision-making and ongoing programme iteration.

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Annex 1 Systems thinking and complexity-sensitive methods

As adaptive management is considered to be especially useful in programmes that include complex elements, a few words about systems thinking and complexity-sensitive methods are in place. 'Systems thinking and complexity-sensitive methods' is an umbrella term encompassing a range of tools and methods. Some of the tools and approaches presented in this working paper, such as outcome mapping and outcome harvesting, are often understood as belonging to this category too. What unites systems and complexity-sensitive methods is an orientation towards understanding and mapping complex, non-linear relationships between different actors (and factors) that can shape a programme and contribute to desired changes. According to Dillon (2019), many of these methods aim to dissolve the (traditional) distinction between internal and external actors altogether. Instead, they help build a system-wide analysis that 'sees the humanitarian action as just one part of the larger puzzle of crisis and crisis response' (ibid.: 28). Although that was written for the humanitarian context, the same applies for development-focused programmes.

To structure the large number of methods and tools within systems and complexity-sensitive approaches, and to clarify their orientation, USAID (2016) categorises them into: visualisation methods (mapping), visualisation methods (modelling), narrative-based approaches and indicator-based approaches. Table A1 gives a few examples of these methods and of how they can be helpful for adaptive management.

Table A1   Some complexity-sensitive methods and how they can help adaptive management

Orientation	Examples of complexity-sensitive methods/tools	How can they support (adaptive) programmes?
Visualisation methods (mapping)	System maps	Can provide information about the alignment and interest of the wider universe of project stakeholders
	Social network analysis	Can identify and track changes in relationships between key project stakeholder groups and networks
Visualisation methods (modelling)	System dynamics	Can provide information about the factors that affect project success based on a richer analysis of interactions between different parts of the system, including divergent stakeholder perspectives
	Agent-based modelling	Can help to predict the outcomes of individual decisions during project implementation based on information about the perspectives and behaviours of target populations
Narrative-based approaches	Outcome harvesting	Can capture a variety of outcomes, including unintended ones
	Most significant change	Can capture participant experiences
Indicator-based approaches	Sentinel indicators	Can give an understanding of context, which helps to experiment, iterate, learn and adapt

Sources: USAID (2016), Dillon (2019), BetterEvaluation website.

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