

Design data-driven programmes that deliver results effectively

A step-by-step guide for programme managers
in international development

Akvo.

Design, Capture, Understand, Act

#withAkvo



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Why this eBook?

This eBook guides programme managers and consortium leads through every step in the design phase of the [data journey](#)¹, resulting in programmes that deliver results effectively. This eBook will help you to:

- Align distributed teams and bolster co-ownership of your programme
- Achieve clarity and oversight on every aspect of your programme
- Make confident management decisions based on accurate and reliable data
- Showcase your results to the people who need to see them
- Gain lessons learned to improve future programmes

Data-driven programme design

The challenges facing the international development sector are complex. Often,

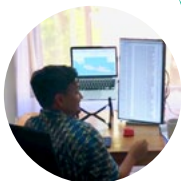
¹ <https://akvo.org/our-approach/>

programmes involve multiple partners with different resources spread across the globe. High quality data is essential in making informed decisions and improving programme results. But gaining a comprehensive overview of what data is needed to make better informed programme decisions can be a challenge. For programme managers and consortium leads, this can lead to an overload in admin, miscalculated budgets, and unclear results. So how do you design your programme to ensure optimal results and smooth implementation?

Gaining clarity on the opportunities, challenges and objectives from the start is essential. What problem do we aim to address and which factors will influence our goals? What work has already been done and who was involved? What do we need to monitor to be accountable, steer and learn? How can we effectively track implementation across different locations? What data do we need to monitor results? How can we ensure that the data collected is used for decision making? These

Share insights with the relevant people, generate dialogue, encourage decision making and continuously improve your work.

Act



Extract the insights that matter. Clean, analyse and visualise your data and turn it into valuable information and knowledge.

Understand



Design

Gain clarity on the context of your programme, the problem you are trying to solve, the data you need, and the roles and responsibilities of each partner.



Capture

Capture reliable and high quality data from the start. Monitor your data collection to ensure accuracy and track progress.

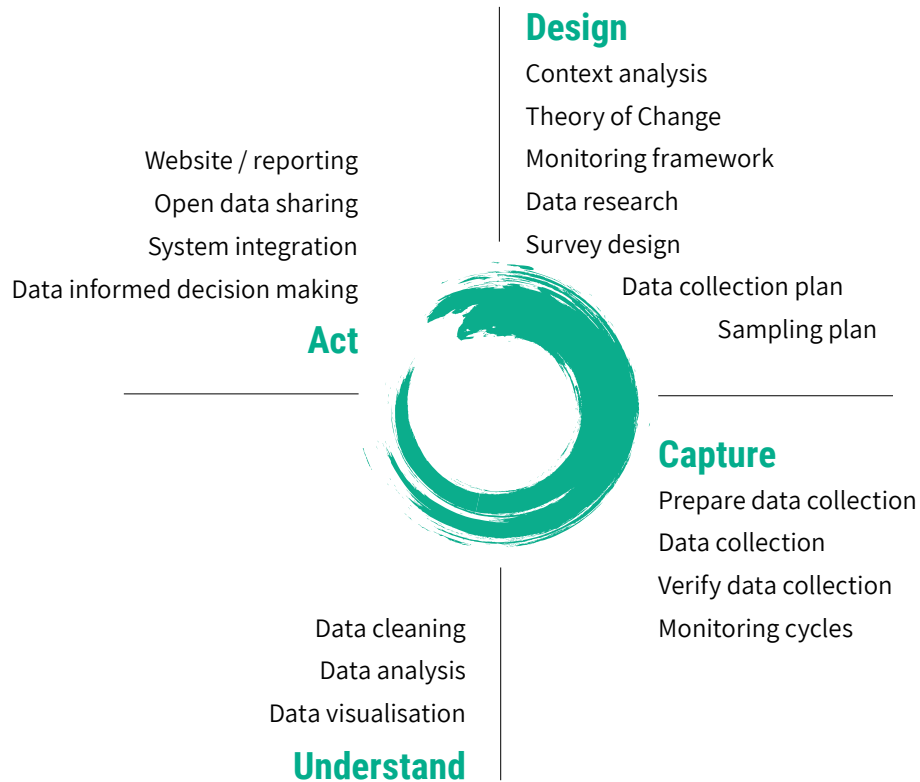
questions are at the heart of any successful data-driven development programme. However, if they are not addressed right at the start, they can lead to problems down the line. Why have we overspent on the budget? Why do we have so much unnecessary data? Which data still needs to be collected due to inaccurate and inconsistent collection methods?

Data quality over quantity

In the development sector, streams of data pass through our hands, inboxes, and online tools every day. But collecting data is much easier than [discovering knowledge](https://akvo.org/blog/what-we-talk-about-when-we-talk-about-data-science/)², and many organisations still struggle to make the most of the data they collect. With the definition of the Sustainable Development Goals (SDGs), the development sector has embraced large scale and large volume data use. Too often, however, data is collected using inconsistent methodologies, which can lead to data that is not useable and/or comparable. Sometimes, additional data is collected just because there is the opportunity to do so, leading to data-fatigue and a lack of concrete results for both the collecting organisations and the people from which the data is collected. Lastly, data is not always shared, causing other organisations to collect the same data and waste resources.

² <https://akvo.org/blog/what-we-talk-about-when-we-talk-about-data-science/>

1 | What is a data journey and why do you need it for your programme?



The data journey methodology consists of four phases: Design, Capture, Understand and Act. They form the starting point for organisations to ensure data is used to contribute to lasting and inclusive impact. These phases aren't always consecutive or prescriptive, there may be some overlaps, and it may be necessary to go back to a previous phase due to findings at a later stage.

What does each data journey phase consist of?

Design

Gain clarity on the context of your programme, the problem you are trying to solve, the results you are trying to achieve, the partners you'll work with, the data you need to monitor progress and improve decision making, and the roles and responsibilities of each partner. The design phase should enable you to define your data needs and prepare for a smooth data capture process.

Questions to consider include:

- What is the context you are operating in? Who is involved and what is their role?
- Which impact do you want to achieve and which outcomes will contribute to it?
- Which data will you need for which purpose, which data already exists and which do you still need to collect?
- What does the optimal survey design look like to ensure success?
- Which sampling plan fits best and is most cost-effective?

Capture

Collect relevant, high quality data from the start. Implement your data collection plan and track progress. Questions to consider include:

- Are the tools and skills and logistical plan in place to commence data collection?
- How can you verify and ensure the quality of your data on the go?
- How best do you organise monitoring cycles of repeated data collection?

Understand

Clean, analyse and visualise your data and turn it into valuable information. Extract the insights that you can act upon. In the Understand phase of your programme, you can generate information which can be interpreted to extract insights.

- What data sources are you planning to combine? Is your data clean and ready for analysis?
- How can you extract insights from your data?
- How will you visualise the data and ensure [effective data storytelling](https://akvo.org/blog/five-tips-for-effective-data-storytelling/)¹?

¹ <https://akvo.org/blog/five-tips-for-effective-data-storytelling/>

Act

Share insights with the relevant people, generate dialogue, encourage decision making and continuously improve your work. In the Act phase, you'll share your data to influence change.

- How will you share findings with the key audiences?
- Which systems does the data need to be stored in?
- How can you amplify your insights and create lasting impact?



For programme managers and consortium leads, following this data journey will ensure smooth and successful implementation of your programme, allowing you to focus on improving and showcasing your results. In this eBook, we're focusing on the Design phase of the data journey.

Round out your data journey knowledge



[Download the eBook now](#)

[Out later this year](#)



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2 | How a design phase will help you improve data-driven decision making

Designing a programme in a constantly changing environment can be challenging. The context in which a programme operates is often complex, with many different stakeholders and factors involved. For that reason, it's important to base the design of a programme on an understanding of the context and choose an approach that allows for flexibility instead of stasis. That way, adaptations can be made when needed. Even a relatively straightforward data collection programme needs to keep in mind which stakeholders will be involved and which problems and opportunities exist, at the start and throughout.

The methods explained in this chapter are geared towards optimising the outputs of your programme design and implementation while emphasising the importance of the design process in itself, which will help stakeholders align and feel ownership of the programme. It's important to carefully document the entire design phase in order to capture lessons learned that can be shared within the sector and can be used to feed into future programmes.

This approach to programme design is [Theory of Change](#)¹ (ToC) based, a methodology which helps you to structure reality and understand how your programme can contribute to a process of change.

¹ <https://akvo.org/blog/akvo-theory-of-change/>

If you have a certain impact in mind that you want to contribute to as a programme, a ToC helps you to understand which different outcomes you need to achieve in order to reach your envisioned impact and how these outcomes are interrelated. While the word impact refers to the ultimate change that your programme aims to contribute to, the outcomes are changes that need to happen in between. Designing a ToC together with all stakeholders will result in a common understanding and co-ownership of the programme and will facilitate the planning of your activities in a participatory way. It will also help you to discover what you collectively want to learn, and therefore to decide what you want to monitor during the programme.

This chapter takes you through the three steps involved in programme design before going into depth in the following chapters. It's important to remember that, while the steps are presented in a sequence, the three are circular in nature. For example, in order to be able to map all relevant stakeholders, there needs to be an awareness of the context and of what the problems and opportunities are. You might realise after the context analysis that some important stakeholders were overlooked during the analysis. Each step in a ToC based programme design can make you realise that something was missing or not clear enough in a previous step and may lead to revisions.

How it works in three steps: context analysis, Theory of Change, and monitoring framework

Step one: Conduct a context analysis

Before designing the ToC, you need to have a thorough and common understanding of the context in which your programme is operating. Therefore it is good practice to start with a context analysis, which consists of a factor, issue and stakeholder analysis, and maps of the findings. Chapter three describes in detail how you can conduct a context analysis.

Step two: Design your Theory of Change

Define an impact that you want to reach or contribute to with your programme and think backwards. Which outcomes need to be realised to reach the impact, and how are they interconnected? Which strategies will help to achieve these outcomes? Make sure that all your underlying causal assumptions are recorded and made explicit. Chapter four takes you through each step of designing a ToC.

Step three: Build a monitoring framework

From the ToC, collectively agree on what key expected outcomes (and impact) all stakeholders want to monitor. For those, design a planning, monitoring, evaluation and learning (PMEL) framework, with indicators and means of verification. In addition, monitor the causal assumptions that you are unsure about. Based on your monitoring findings, the ToC should be revised on a yearly basis and adjusted accordingly. Chapter five and six explain the best way of building your results framework and choosing your monitoring and reporting tool.

All three steps require a highly participatory approach, to ensure relevance and co-ownership from the start.



3 | How to conduct a context analysis



Before designing a programme, it is crucial to understand the context in which it is operating to ensure that everyone involved has a similar understanding of the situation and that the programme is designed to address the relevant issues with the right people. Context analyses are often outsourced to external consultants. However, our experience shows that some of the knowledge, understanding and connections that the external consultant acquires during the analysis may be lost in the transfer of information. Therefore, we suggest having the context analysis done in a participative way with skilful insiders; having the wisdom in the room by inviting the right people. This way, the exercise can result in a deeper understanding and higher usefulness to the design of the programme. The context analysis usually consists of two interlinked exercises:

- Mapping and analysing stakeholders
- Mapping and analysing factors

Map and analyse the stakeholders

The participatory stakeholder analysis helps you to identify and map all relevant actors and their roles, responsibilities, relationships, interests, and relative influence/power. Relevant refers to the actors who have something to do with the impact the programme aims to contribute to. It is important to make sure all actors are taken into account, including vulnerable and underprivileged groups who may otherwise be overlooked. This exercise is of most value when performed in a group or workshop setting, and will help identify which

strategic stakeholders need to be involved in your programme, and in what way. During the programme, power relations may change and new stakeholders may appear or knowledge gaps regarding existing stakeholders may be filled. It is therefore advisable to review your stakeholder analysis on a regular basis.

There are three types of stakeholders for you to consider:

1. **Communities:** The people who experience the problem directly, and interact with problem solvers.
2. **Problem solvers:** The civil servants, non governmental organisation (NGO) staff, frontline responders, and others on the ground.
3. **Policy and decision makers:** The people who have access to resources and control allocation, or can influence decision making.

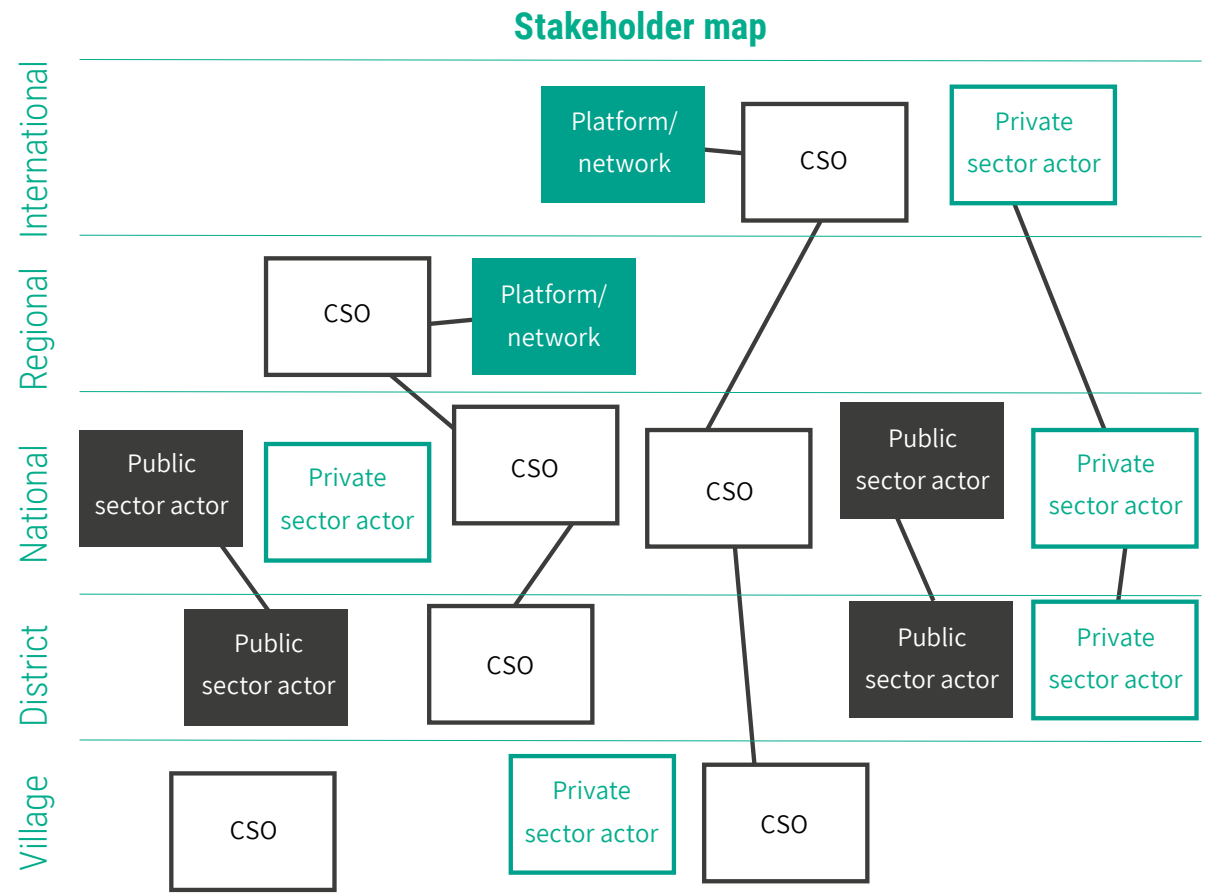
It is important to include informal stakeholders in the analysis and not only the formal ones. Formal stakeholders are institutions or people with legal status, such as government entities, private corporations or NGOs. An informal stakeholder is a person or group of people without legal status, but with a vested interest in the impact the programme aims to contribute to. For example, a formal stakeholder could be a member of the ministry of health, and an informal stakeholder could be a local

activist campaigning for health rights. Informal stakeholders can be very influential but are easily overlooked.

Create a stakeholder map

In a stakeholder map, all actors that are relevant for the programme's success are noted down on colour-

coded cards (different colours for government, civil society, private sector, knowledge institutes), and organised according to the level at which they are most active (international, national, regional, district, community). Links between actors can be indicated with different types of lines.



Create an influence-interest matrix

Once all stakeholders have been made explicit, you can create an influence-interest matrix to discover more about each actor's interest in and influence on the data collection and data-based decision making in the programme. The following questions can be useful in this discovery:

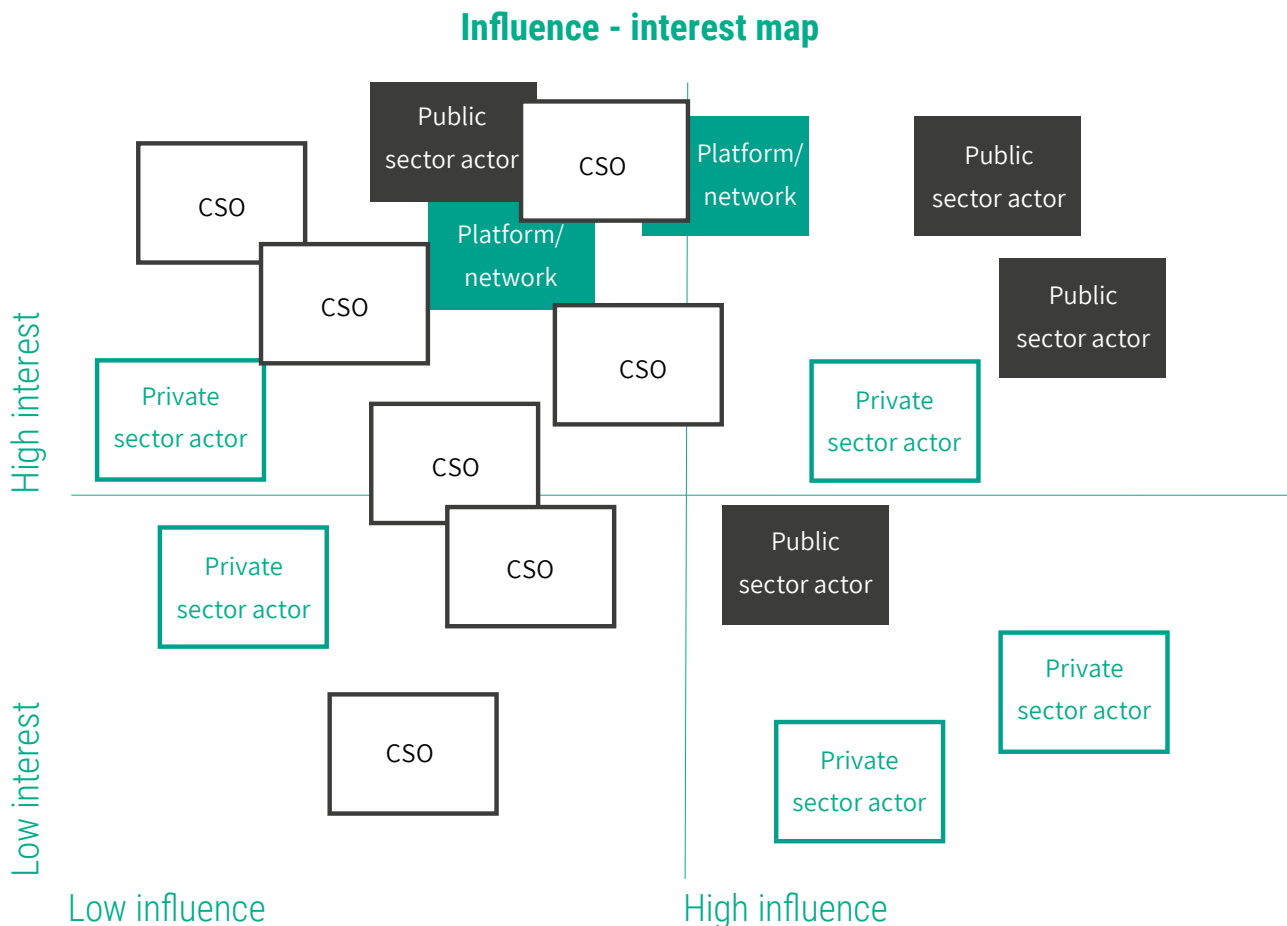
- What is their influence on the problem?
- How might this person benefit from the programme?
- What could this person do with better data on the problem?
- How does data support this person's decision making now?

- What could they do to undermine the programme?
- What is the best way to keep them engaged?
- How can they contribute to a solution?

All of the actor cards can be plotted on four quadrants of the y-axis (interest) and x-axis (influence), according to how interested they are in the success of the specific programme, and how much influence they have in making it happen. Powerful stakeholders can also have a strong negative effect on the success of the programme. During this exercise, it is possible that actors who had not yet been identified in the stakeholder map are included.

While doing both exercises, keep in mind that there are both formal and informal power structures to take into account. Government would be a formal power structure, while activist groups would be an informal power structure.

These exercises produce the richest insights when done in a participatory way in order to include different perspectives. The discussions generated by the exercises help to bring out the different perspectives at a time when these can be taken on board and to create co-ownership and a shared focus for all involved.



Map and analysis the factors

Besides stakeholders, external factors also need to be taken into account when designing a programme. Are there any environmental, historic, political, cultural or socio-economic factors that are likely to have an effect on the success of the programme, and in turn, on that which the programme can have an effect? Identifying these factors will help to determine the problems and opportunities that need to be addressed. Documenting all factors at play will help to justify decisions on the programme's scope and focus. Besides data research (chapter seven), brainstorming and interviewing key stakeholders is helpful in identifying and documenting factors. This can be done by creating a problem tree.

Create a problem tree

A helpful method for mapping out factors is creating a problem tree¹ or a conceptual model. Start by defining the impact that the programme aims to address, such as sustainable and inclusive water, sanitation and hygiene (WASH) services. Write it on a card and stick it to the wall. Using the knowledge of the people in the room, brainstorm the various

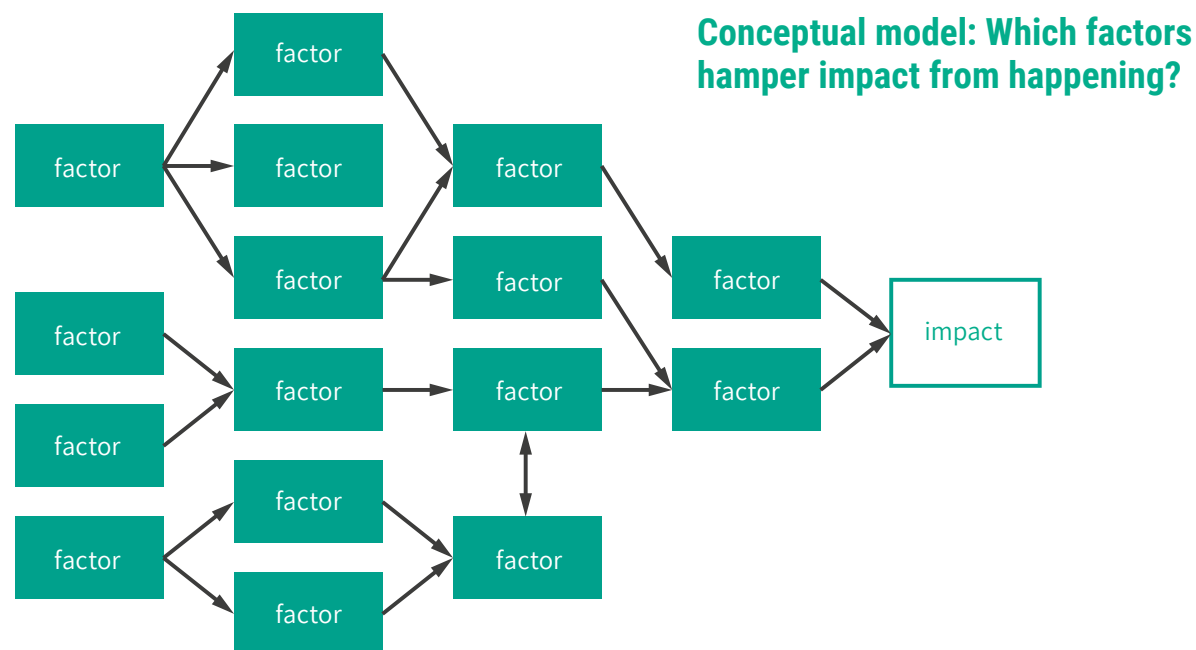
¹ More guidance on how to do a problem tree: <https://www.odi.org/publications/5258-problem-tree-analysis>

factors related to the desired impact: what is hampering the achievement of this impact? Why is it not happening now? The next step is to cluster the cards according to topics, and then organise them in cause and effect relationships on a map. In our experience, no more than 25 factors works best to avoid spreading the focus too thin. Such a map, or conceptual model, helps to create a common understanding of the problems, how they are interrelated, and what the root causes are. It can also help to distill what activities should be put into play to address the problems outlined by the

programme, and what the scope of the programme should be.

By doing these exercises in a participatory manner, the relevant stakeholders should reach a common understanding of the problem that the programme is trying to address. What are the issues that lead to the overall problem and how are they interrelated?

Once you've conducted your context analysis, you can use all of your knowledge and information to design a Theory of Change.





4 | How to identify your programme's steps toward impact

Glossary

Impact: An impact is a change at the level of end-users, communities or constituents. Impact is in our sphere of interest, but we can only contribute to it.

Outcome: An outcome is defined as a change in the behaviour, relationships, actions, activities, policies, or practices of an individual, group, community, organisation, or institution. The formulation describes which specific local stakeholder is doing what differently. Outcomes are in our sphere of influence.

Strategy: Strategies are a general description of what the programme needs to do to make the expected outcomes happen.

As the name suggests, a Theory of Change is a hypothesis of how we think change occurs. It consists of a visual diagram and a narrative with causal assumptions - "if we do X, Y happens because we believe Z." ToCs are also referred to as Intervention Logics or Results Chains. When designed with an understanding of factors and stakeholders, a ToC helps to make sense of and navigate the complex environment in which the programme is operating. A ToC is a perception of reality which is shaped by the norms, values, experience and beliefs of the people who create it. It's therefore important to involve different stakeholders, to be sure different perspectives are captured in the ToC. Designing a ToC together will:

- Lead to a common understanding of how change happens
- Create awareness on different norms and values between stakeholders
- Generate co-ownership of the programme
- Help to decide on the scope of the programme
- Support decision-making on what interventions should be pursued to

achieve the biggest impact by whom

- Expose gaps in your activities or show you where there is an overlap with the activities of other actors or programmes.

Below are the steps to defining a Theory of Change

Define your desired impact

When designing a ToC, the first thing that needs to be identified is the desired long-term impact the programme wants to achieve or contribute to. After identifying the intended impact, the participants can determine which outcomes need to be achieved in order to reach that long-term impact. An example of an impact statement is sustainable and inclusive water, sanitation and hygiene (WASH) services.

Determine your outcomes

An outcome is a change in the behaviour, relationships, actions, activities, policies, or practices of an individual, group, community, organisation, or institution. In order to phrase an expected outcome, it helps to use the following mnemonic: “who should be doing what differently?” For example, the ministry of water use the online water quality dashboard to make decisions on investment priorities.

Identify your pathways of change

Once all expected outcomes have been identified on cards, they can be organised on the wall in logical cause and effect relationships. When a programme has several topics or issues, separate pathways of change can be built for each of them, with small teams who can zoom into each specific topic. The resulting pathways of change can then be collectively connected at the end to have the full Theory of Change.

Specify your strategies

Once the stakeholders have identified one or multiple pathways of change, they can come up with strategies to set into motion the causal chain of events. Strategies are a general description of what the programme needs to do to make the expected outcomes happen. Every strategy will have a pathway of change. Strategies are a general description of what needs to be done; the more specific activities in the strategies will be defined later. In reality, strategies may already be determined before the expected outcomes are mapped and an impact is defined. In that case, the ToC design exercise will help to identify the expected outcomes and their causal relationships and understand how the strategies will lead to the envisioned impact. For example, we support the ministry of water with data collection and analysis for water point mapping.

Connect your pathways of change

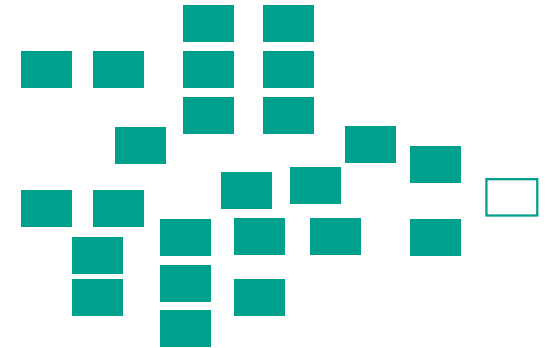
Once the strategies, expected outcomes, impact(s), and their linkages are identified, the underlying causal assumptions should be made explicit. Trying to document these assumptions can lead to the identification of weak spots in the Theory of Change and, at the same time, result in stakeholders becoming aware of each other’s visions of reality. When phrasing causal assumptions, it can be tempting to start a circular reasoning.

Avoid phrases like “A leads to B, because B is the result of A”. Instead, try reasoning as follows: “If we do action X, we will contribute to outcome Y because we believe that Z.” For example, if we support the ministry of water with data collection and analysis for water point mapping, then they will use the map for decision making on investment priorities, because they were actively involved in the identification of the problem (no updated information on functionality of water points) and feel co-ownership of the solution (data collection for evidence-based decisions).

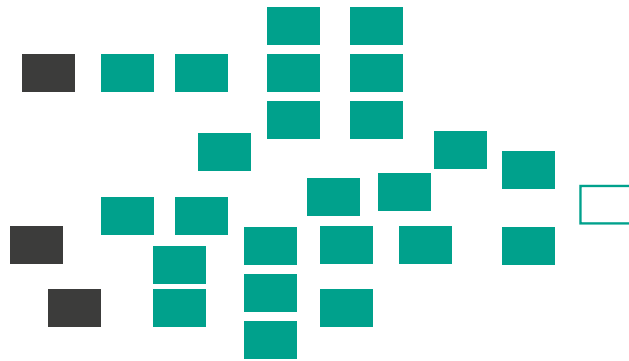
1. Expected impact



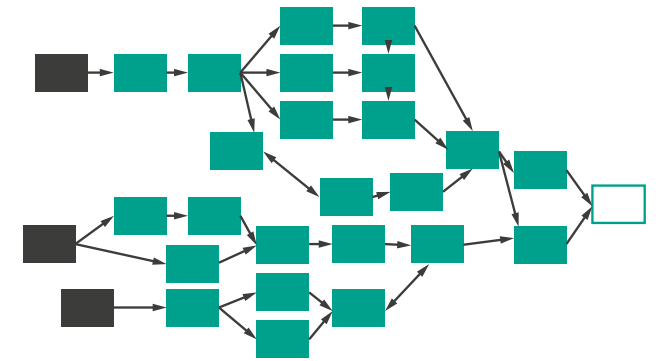
2. Expected outcomes



3. Strategies

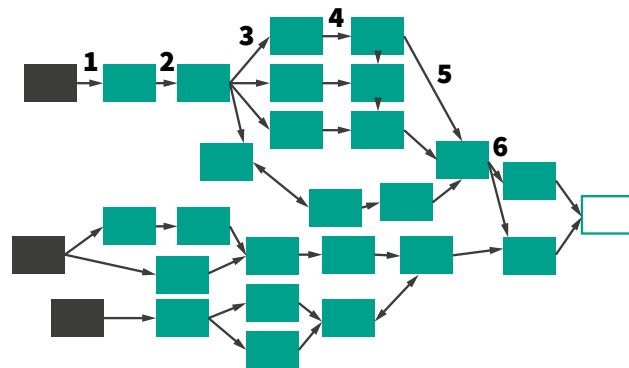


4. Cause - effect relations



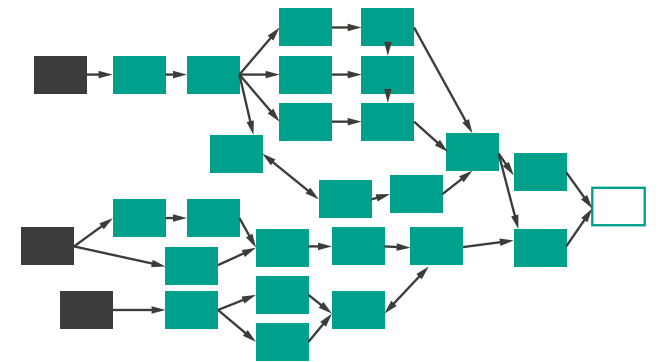
5. Causal assumptions

- 1:** If we do X, Y happens.
- 2:** We expect that when this outcome happens, the next outcome happens because Z.
- 3:** Etc.



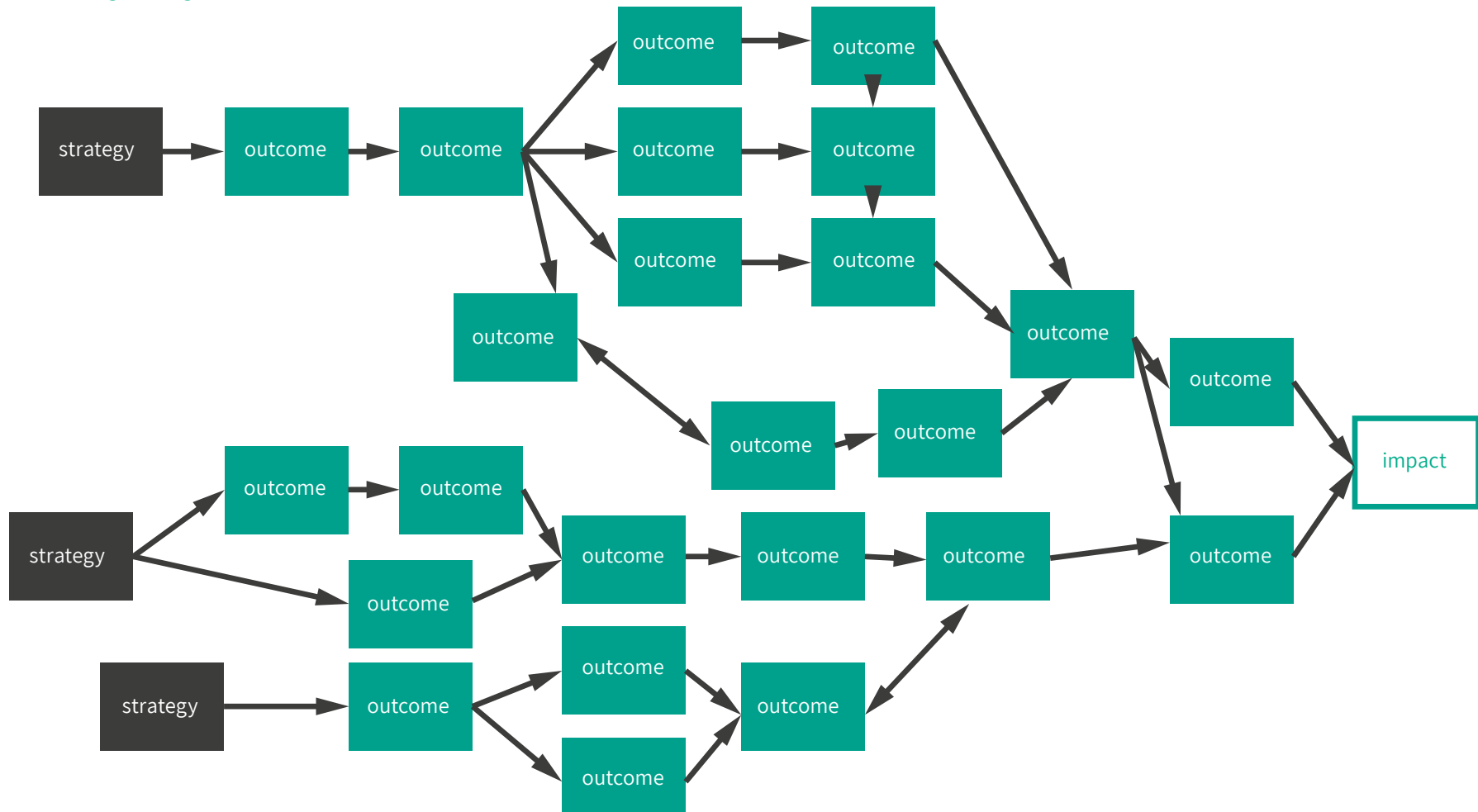
6. Theory of change diagram

See next page for larger model.



Once you've designed your Theory of Change, you can build your tailor-made planning, monitoring, evaluation and learning (PMEL) framework, which will allow you to accurately monitor your results.

Theory of Change diagram



Case study



Creating Theories of Change with the Watershed programme

Challenge

Watershed is comprised of multiple partners in different locations, with different resources, interests, capacities and responsibilities.

Contributing effectively to the desired impact for Watershed, to achieve sustainable WASH for all in each focus country, is deeply complex.

Partnership

Creating a ToC is always a collaborative process, which Akvo facilitated with multiple workshops in several of the Watershed countries.

Once the programme-level ToC was created, Akvo facilitated the development of country-level ToCs, taking into account the specific local context of each country.

Change

A year into the programme, monitoring data showed the Watershed teams what progress had been made, but also helped to reflect on the Theory of Change with new understanding. By looking forward, looking back, zooming out, and zooming in, Akvo helped to create clarity for everyone involved, ensuring that all actions are relevant and strategic, all the while empowering the best people to do the job.

5 | How to design a results monitoring framework

A well-formulated results framework, also known as a planning, monitoring, evaluation and learning (PMEL) framework, is designed to let you know whether or not your programme is succeeding. For programme managers, a good results framework is key to gaining a comprehensive overview of how the programme is performing and what decisions need to be made to improve results. Besides improving your programme's results, a good results framework will allow you to monitor the causal assumptions laid out in your Theory of Change that you're unsure about. Based on your monitoring findings, you can adjust your ToC accordingly. In this chapter, we introduce the key steps in designing a results monitoring framework that will save resources, align distributed teams, and improve programmes.

Monitor your outcomes

A strong, well formulated Theory of Change is the foundation of a relevant and useful PMEL

framework. All of the steps between the strategy and the impact are expected outcomes that in theory can be monitored, but in practice should not be. Only a small selection of the outcomes should be selected and monitored. For example, out of 25 expected outcomes in the ToC, monitor four or five. Together, the stakeholders can define which outcomes are the most important, as well as practical, to monitor across the programme. Use your ToC as your guide here, choosing the outcomes that are both measurable and contribute significantly to the desired impact. Your resources will also play a role, as some outcomes will be less cost-effective to monitor than others.

Translate your outcomes into indicators

Once you've decided which outcomes to monitor, you can translate your outcomes into indicators that can be measured. Each expected outcome can have one or more indicators that make it possible

to measure the progress towards this outcome. For example:

Outcome: The local government effectively monitors WASH infrastructure in district X.

Indicator: Number of water points monitored on functionality and water quality in district X.

Outcome: The national government allocates more budget to WASH.

Indicator: Amount of budget that is allocated to the ministry of water on a yearly basis.

Together, these indicators constitute the programme's monitoring framework. For each indicator, the method used to measure it needs to be determined, as well as the baseline values and target values.

Establish the baseline values

You should be able to measure your indicator accurately using either qualitative or quantitative data. Before you set your target value, you need to establish baseline values in order to monitor change. Primary or secondary data sources can be used to establish your baseline values. Baseline data may already be available, or you may have to collect it yourself.

Define your target values

The next step is to set the target value you expect to achieve with specific timeframe given the scope and resources of your project. Targets help to determine whether progress is being made compared to projected expectations. If actual data diverges from a set target notably, adjustments should be triggered in programme implementation and/or design and expectations.

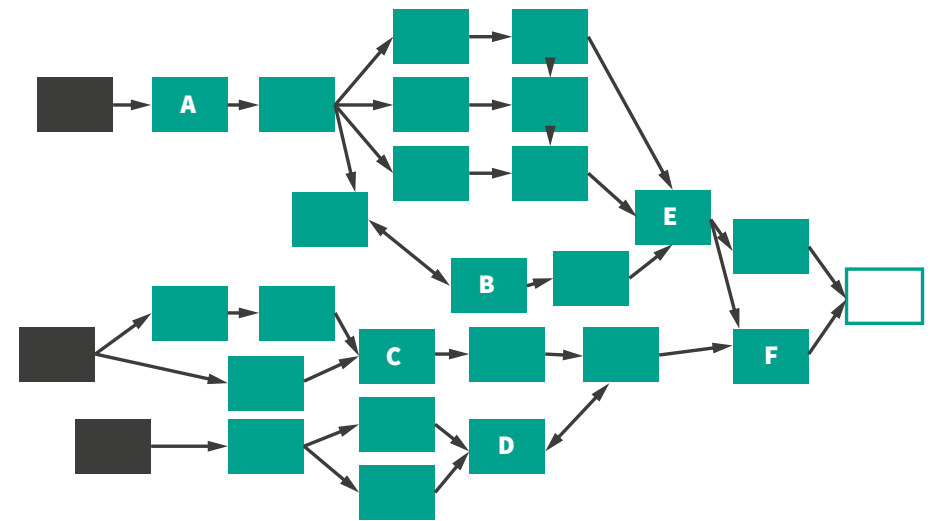
Determine your data collection methods

Data collection is dependent on the kind of indicators and key questions established. There are a variety of tools and methods for data collection and they may vary by indicator type. For example, for quantitative indicators you might use questionnaires, activity logs, or before/after surveys. For qualitative indicators, you could use interviews, field observation visits, stakeholder meetings, or group discussions. You should also determine here at what interval each indicator should be measured.

Identify the data sources

Identify those responsible for collecting or providing the data. This can be project staff, implementing partners, independent evaluation teams, end users, sensors, or secondary sources. Remember that there may be a lot of useful datasets already available. Once these steps have been covered, you can put it into a results monitoring framework.

Choose expected outcomes to monitor



Monitoring framework

Outcomes to monitor	Indicators	Description of indicator	Method	Frequency of measurement	Responsibility	Costs
A						
B						
C						
D						
E						
F						

6 | How to choose the right tool for effective results monitoring

Choosing the right tool to set up your results monitoring framework depends on many factors, from your programme's resources to the geographic spread of your team. At present, two of the most common tools used by M&E managers are Excel, and more recently Google Sheets, both of which are effectively free. However, the challenges in using those tools after the results monitoring framework has been established and the programme has commenced can incur hidden costs. In this chapter, we've outlined some of the deciding factors in choosing your results monitoring tool.

Align your distributed teams

Programme managers working with distributed teams spread across several implementing countries know that once a results framework is finalised and project activities have started, working off a single Excel document becomes frustrating. Not long after implementation, the master results framework can become riddled with incorrect results data. Which document version was the monitoring and evaluation officer in Beirut working in? Am I looking at the

correct values for Burkina Faso after I corrected the last version?

Collecting results data in a timely, organised way with a system that ensures data quality is not easy. A single online platform, accessible anywhere with connectivity, can mitigate this challenge; it eliminates the search for scattered documents and data while providing transparency on who has input the encoded data.

Consider staff turnover

Another common occurrence when working on large multi-country, multi-year programmes is that staff often do not stay for the entire duration of the programme. For a programme manager this can present challenges, especially when it comes to the quality of results data. With changing programme staff, it can become difficult to know exactly who submitted what results data and when. This uncertainty can diminish data integrity and ultimately leads to additional costs in the form of more staff time.



Online tools that tag each indicator results update with useful information can solve this problem. This way, you can easily find out who entered the results, who approved the results, and when. The result is an auditable data trail, providing programme managers with a comprehensive oversight of results throughout the programme.

Discover your reporting needs

Making sense of data collected in multiple programmes in different countries and turning it into unified, digestible and insightful reports, often under time pressure, can be a real challenge. Working in an intuitive monitoring and results platform that allows you to create high quality, appealing reports can significantly reduce the admin burden for programme managers. An online environment can also make sure results are easier to share externally. Finding a tool that allows you to report to International Aid Transparency Initiative (IATI) standards means that you don't have to carry out duplicate reporting to the IATI Standard in a separate process. It also allows your data to be easily compared with data published by other organisations reporting their development cooperation activities to IATI.

The monitoring framework of a programme shows what data needs to be collected to describe or score the indicators which are used to monitor progress, as well as which methods will be used. Finding the right tool for your programme's needs and data uses is an essential step in the design process. This is how Theory of Change based programme design links to the chapter seven, data research, where we assess whether any of the necessary data is already available from secondary sources, and what data still needs to be gathered by the programme.

7 | How to conduct data research for your programme in four steps

Data research is a method that helps you to systematically assess existing data and data sources, allowing you to identify where there are gaps in the data you need and where you can add value with your programme. At the same time, data research gives you the tools to think about your stakeholders and audience. In this chapter, you'll find an overview of four consecutive steps that will help you in conducting data research:

- Make an inventory of existing data/evidence
- Evaluate existing data
- Perform a gap analysis
- Understand who will use your data

Make an inventory of existing data/evidence

Once you've identified what data needs you have within your programme, you will need to start gathering it. Some data may be readily available,

while other data may still need to be captured. You can start off by making an inventory of existing data.

First of all, look into the data resources of your own organisation, including what is gathered in reports and stored in databases. Consider both quantitative data, expressing a certain quantity, amount or range, and qualitative data, which is more descriptive, resulting from small scale surveys, focus group discussions, observations and interviews. You can then think about what data may be available and easily accessible outside of your organisation. Are there any data sharing platforms or other organisations that deal with the same problem or try to answer the same question? What data do they have on this problem? Is it open access? Even if data is not openly accessible, it might be possible to persuade this organisation to share its data.

Evaluate existing data

Once you've created an inventory of existing data sources, it is important to evaluate the existing data on its accessibility, granularity, credibility and relevance. The following questions can help you understand whether the existing data is available for usage, detailed enough and has the right scale, and reliable enough for you to use in your programme:

- Is the data openly available, or does it require special permission to access? (Accessibility)
- Is the data structured in a way that is useful for your programme? (Relevance)
- How often is the data collected? (Granularity)
- How granular or detailed is the data geographically? (Granularity)
- How granular or detailed is the data

demographically? (Granularity)

- When was the data collected? How long has it been retained? (Relevance and Granularity)
- Do the current problem solvers use it for decision making, evaluation, or something else? (Credibility)
- Who collected the data? What was the purpose of their data collection? Has the data been cleaned and/or analysed? And if so, in what way? (Credibility)

Perform a gap analysis

Now that you've identified the data sources that are available to you and what data you can use for your programme, you need to think about what data you still need to collect to answer your questions. To do so, it helps to ask the following: what data do I need to answer my questions or describe my indicators? It's important that, in the first instance, you don't think about restrictions that might be apparent in collecting this data. Only after identifying the data you need should you start considering potential restrictions, such as time, resources and feasibility. It might turn out that data you initially deemed infeasible to collect isn't as difficult to gather after all.

Once you have identified all the data gaps, take a critical look at the data you've identified as necessary. Do you really need to collect all that data? And what are you going to use all the different elements for? Although it's tempting to collect data that you may think will be useful in future, a general rule of thumb is that less data is more. It's better to focus on the things that really matter and minimise complexity. It's less expensive, less time consuming, and you don't run the risk of collecting the wrong data.

Understand who will use your data

If you are collecting data to contribute to solving a problem, or to underline the importance of addressing a certain problem, keep in mind that it is crucial to involve all relevant stakeholders from the start of the data research process. This will create ownership of the data, ensure relevance and usefulness of the data, result in communities feeling represented by the data, and avoid decision makers turning a blind eye or questioning the credibility of the data. Start your data collection exercise with an inventory of what the different stakeholders want to know and how you are going to reach them. Sharing the data with the people directly involved in the

problem empowers them to take action. However, this involves thinking about how to share the data in an understandable and accessible way. In remote communities, accessing the data online may prove to be difficult, and radio stations or distribution of offline materials may be a better mode of dissemination. You might want to consider making a data dissemination plan, in which you identify your stakeholders and their respective communication channels.

Data research is an approach that will help you to create focus in your programme. Thinking in this structured way about data gathering will avoid collection of duplicate data and encourage everyone involved to determine the quality and usefulness of available data. This method also allows you to assess whether the data you are collecting is truly relevant to your programme, and the different stakeholders involved, and forces you to think about how to disseminate the data to them before the data collection has actually started.



Conclusion

The Theory of Change based approach to data-driven programme design is an effective way of working collaboratively towards a common understanding of what the programme should achieve and what activities the programme should focus on to contribute to impact. It is important to note that a ToC by nature is subject to constant change. During the implementation of a programme, the context may change, resulting in the need for an adaptation of the ToC. During implementation, you may realise that outcomes are missing, causal assumptions need to be adapted, or interrelations changed. Theories of Change therefore need to be reviewed at least once per year, based on monitoring findings and a context analysis update. At the same time, a ToC revision workshop can form an excellent basis for writing an annual activity plan, keeping the ToC at the heart of your programme at all times.

By conducting a thorough design phase, you'll achieve clarity and oversight on every aspect of your development programme and align distributed teams from the start. This will allow you to make decisions with confidence based on accurate and real time data, reduce your admin burden, and focus on showcasing your results, securing funding and driving impact.

About Akvo

We believe in equal access to public services, reliable infrastructure and a safer environment for everyone. We are convinced that this will happen faster if governments and non-governmental organisations become more effective, accountable and collaborative.

Since 2008, we've worked with over 20 governments and 200 organisations in more than 70 countries to improve the way they implement development projects and make decisions using data. We call them partners.

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A high-angle, close-up photograph of a person wearing a white short-sleeved shirt, focused on a red smartphone. The person is holding the phone with both hands. In the foreground, a red Akvo data collection box is open, revealing several yellow and white packets. The background is a light-colored, textured surface, possibly a concrete step or wall. The overall scene suggests field data collection in a developing area.

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