The Donor Committee for Enterprise Development

3. Measuring Attributable Change

Implementation Guidelines for the DCED Standard. Updated by Nabanita Sen Bekkers, Nov 2021

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1. Where these Guidelines fit in the Standard

The DCED Standard specifies seven elements of a successful results measurement system. This guide covers the third element; measuring attributable change. It accompanies a 'Practical Guideline for Conducting Research' which provides in-depth guidance on key steps towards designing and undertaking quality research and 'Measuring Attribution: A practical framework to select appropriate attribution methods' which provides guidance on different attribution assessment methods and how to select the most appropriate one. For guidance on the other six elements of the Standard, visit the DCED website, or click on the links below:

1) Articulating the Results Chain
2) Defining Indicators of change and other information needs
3) **Measuring Attributable change**
4) Capturing wider change in the system or market
5) Tracking costs and impact
6) Reporting costs and results
7) Managing the System for Results Measurement

1.1 How to use these Guidelines

These guidelines are for programmes implementing the DCED Standard for Results Measurement in Private Sector Development. The DCED Standard provides a practical framework for programmes to monitor their progress towards their objectives, enabling them to better measure, manage and demonstrate results.

The Standard specifies six control points for measuring attributable change. Each control point is broken into *compliance criteria*, which indicate whether the control points are met or not. For each control point, this guide provides additional advice explaining what they mean, and how to comply. It also links to further guidance and resources. The first four control points are required for compliance with the Standard (highlighted below with 'Must') while the last two are recommended, but not required.

Use these guidelines to better understand what the DCED Standard requires, and how to achieve it. By doing so, you will strengthen the quality of your results measurement system, and be better able to measure, manage, and demonstrate your results.

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2. Introduction to this paper

The Reader on Results Measurement notes that 'assessing the extent to which changes are due to an intervention or programme is often a challenge and in programmes that have been audited, it is often one of the weakest areas of results measurement systems.' This reflects programme reality where, given limited resources, inadequate funding for results measurement and a pressure on reporting large numbers, programmes struggle to apply a credible attribution strategy. The problem is further compounded by the misperception that the DCED Standard requires using quasi-experimental study design to assess attribution.

The DCED Standard does not actually prescribe any particular attribution strategy and in general emphasizes that any approach taken by a programme should convince a reasonable but sceptical observer. In practice, this means that the Standard recognizes that the actual method for assessing attribution will always be dependent on individual circumstances. In an intervention where a programme is introducing a new innovation, it may be quite easy to develop a credible and robust attribution story using a simple before-and-after comparison. In another intervention, where there are many influencing factors, the programme may require a more sophisticated method to assess attribution. For example, by comparing a before-and-after picture with a comparison group. However, the choice of which tool to use is not only reliant on picking the best method but also reliant on what is possible given a programme's limited resources. In another scenario, a programme may even decide to only assess contribution towards impact if it decides that it is not feasible to assess attribution. The test of credibility lies on two main factors:

1) A programme should be able to reasonably explain its choice of tools
2) A programme should be transparent in reporting results. i.e., clearly report the sources from which results have been derived.

As such, this paper outlines the most common practices adopted by programmes that are using the DCED Standard. It is not meant to cover the 'gold standard' in assessing attributable change but rather outlines the 'good enough' approach adopted by programmes with time and resource constraints.

The DCED Standard divides measurement of attributable change for interventions into three stages: baseline, monitoring and impact assessment. Baseline and impact assessment are usually conducted as one-off assessments to measure and report on impact with some quantitative rigour. On the other hand, monitoring is typically done in-house through more frequent, quick checks by programme teams to understand why and how change takes place and react in time if things are not on course. Following these different stages in measurement allows a programme to collect information for learning and management, as well as credible reporting.

Section 3 of this guidance provides an introduction to attribution; why it is important to measure , how to measure it, and how to do a contribution analysis when it is not possible to assess attributable change. Section 4 gives examples of the most widely used tools and practices applied by programmes in all the different stages of measuring results. Section 5 details the specific compliance criteria for the DCED Standard and provides information on how a programme can comply with them.

3. Why measure attributable change?

3.1 What is attributable change?

Attribution is defined by the OECD DAC Network on Development Evaluation as the ascription of a causal link between observed (or expected to be observed) changes and a specific intervention. It represents the extent to which observed development effects can be attributed to a specific intervention or to the performance of one or more partner taking account of other interventions, (anticipated or unanticipated) confounding factors, or external shocks.[1]

In simple terms, attributable change refers to the amount of change that is caused by a programme's work. When a programme is implementing an intervention, there are a many external influences that may also impact the desired change that is expected by the programme. Some examples of such external influence may include natural growth in the economy; influence from government and private stakeholders; work of other development initiatives; change in the climate etc. For instance, take a programme that is working in the tourism industry with some local tour operators to improve their services so that more tourists are attracted to visit local attractions. The number of tourists that visit these local attractions may therefore increase because the local tour operators improve their facilities as initiated by the programme. However, the number of tourists may also have increased because the government dropped ticket prices of tourist sites at local attractions; or perhaps there was an influx of international tourists due to a seasonal dip in airfares. These external influences may all have a role in contributing to the increased number of tourists who visit local attractions. The *attributable* change caused by the programme is the proportion of change that occurred as a result of the local tour operators improving their service, i.e. the increased number of tourists who visit local attractions due to the intervention.

3.2 Why is it important to measure attributable change?

In private sector development, programmes aim to trigger sustainable change by partnering with existing market players (public and private) to contribute towards development outcomes. For example, by partnering with large seed companies who can increase the distribution of seeds for 'last-mile' farmers located in remote areas, or by collaborating with a Business Membership Organization to lobby for easier business registration for small and medium enterprises. The chain of impact from a programme to the final beneficiary is longer compared to that for a direct delivery programme, which may just give a cash or in-kind handout to a beneficiary. Thus, for a private sector development programme, there is an increased likelihood that other external factors may influence the more far-removed change that the programme is trying to cause. It is therefore important to measure attributable change, to assess if a programme's intervention is achieving change as initially envisioned. It is also important to ensure a credible report on impact to donors.[2]

[1] OECD DAC Glossary of Key Terms in Evaluation and Results Based Management

[2] Posthumus and Wanitphon (2015), Measuring Attribution: a practical framework to select appropriate attribution methods

The Standard does not require scientific proof of attribution with very large and distinct samples, like in trials of new medicines, as this is not practical for development programs. It rather requires practical research to be conducted, which yields a reasonable estimate of attributable change.

3.3 How to measure attributable change

The starting point for assessing attribution must be a spirit of honest inquiry where a programme genuinely wants to find out to what extent changes have been due to an intervention, or toother factors. In other words, all programmes must provide a convincing case to justify why their beneficiaries would not have done equally well, or better, without the intervention. In order to measure attribution, a programme has to develop a strategy to show why change is happening. There are essentially two steps towards plausible attribution, outlined below.

3.3.1 Proving causation

The first step towards determining the attribution of a programme is to prove causation by examining the different levels of change in a results chain[3], and whether any change that occurred was triggered by programme activities. The results chain articulates how different activities conducted by a programme are expected to lead to different levels of change, ultimately leading to development impact.

Figure 1 shows a stylized results chain with the project intervention at the bottom and the expected changes (outputs, outcomes, impact) above. Attribution can be assessed by checking whether the chain of changes have indeed occurred as a result of project activities. So, working bottom-up from the activities to check firstly if change 1 happened, and secondly if it happened as a result of the intervention; then if change 2 happened and so on.

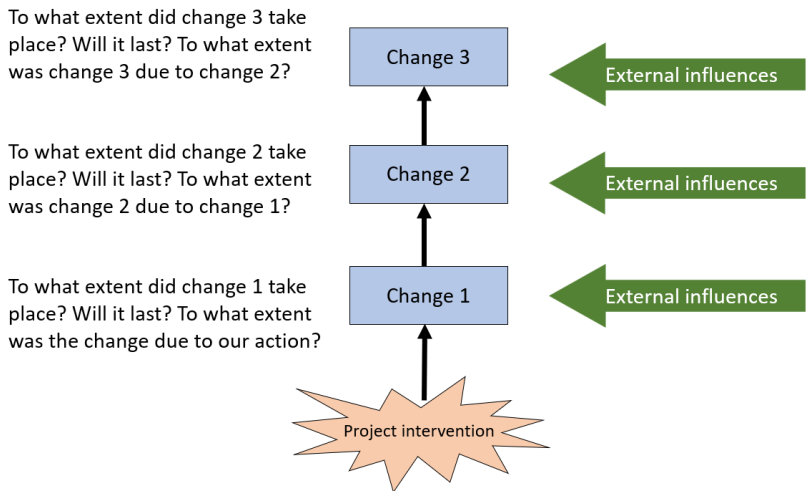

Figure 1 What to measure for each change in results chain

If one level of change has not occurred then the chain is broken. In this case, even if there is a higher level of change, it cannot be attributed to the programme.

For example, take a programme that works with a Ministry of Agriculture in an intervention to train government extension workers on good agricultural practices. The training includes a practical element where private companies demonstrate how to use agricultural inputs. It is envisioned that, as a result of these activities, the extension workers will improve the advice that they give to farmers. It is then expected that the farmers will change their behaviour as a direct result of the improved advice, and adopt

[3] For more details on results chains, refer to the DCED's Guide to Making Results Chains

better farming practices and appropriate input use, which in turn will lead to increased productivity and an increase in their yields and income.

In this case, the programme needs to first assess whether the government extension workers have improved knowledge as a result of the training, then whether they are indeed giving improved advice to farmers, as a result of having improved knowledge themselves. Then the programme needs to show the causal link between farmers receiving this improved advice from the extension workers, to the farmers increasing their knowledge. The programme needs to outline whether each change, as outlined in the results chain, is indeed happening, and whether it is caused by the preceding step. If one of the preceding changes does not take place, then the programme cannot show the link to the final change. This is shown in figure 2. If farmers do not apply the good agricultural practices and appropriate inputs that were promoted through the intervention, it would be difficult to argue that there is any link between the programme's activities and farmers' yield increase. In this case, it is more likely that the yield increase can be attributed to other external factors such as better climate or improved land use.

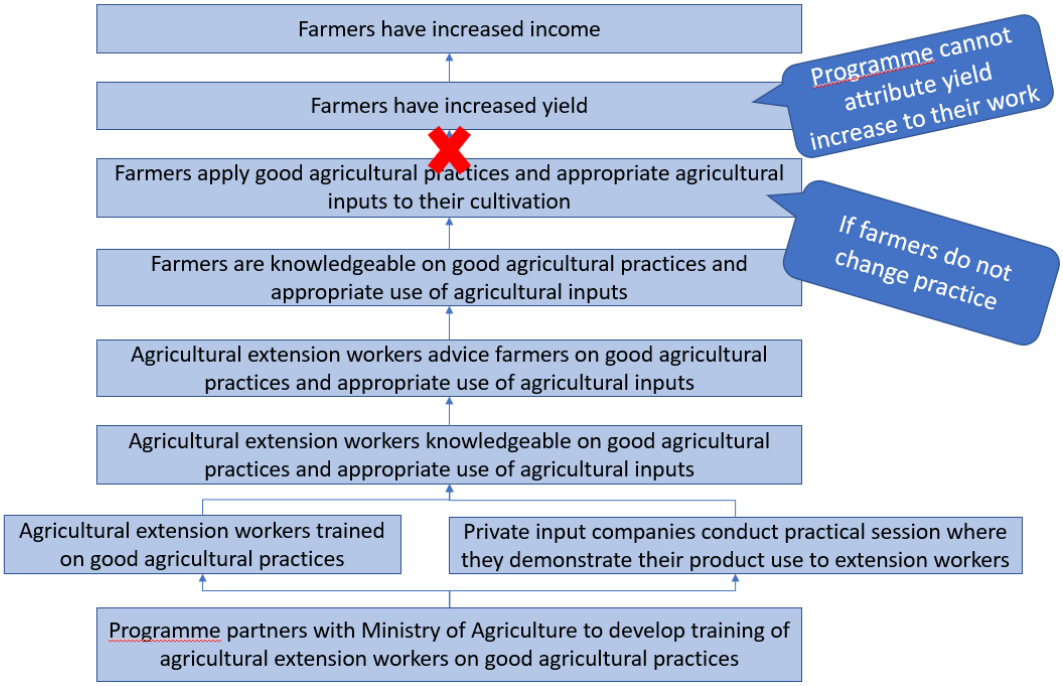

Figure 2 Example results chain of an intervention to train government extension workers

3.3.2 Establishing the counterfactual

Comparing with the counterfactual allows a programme to establish what could have happened if the programme had not intervened. Figure 3 illustrates this. The blue (middle) line shows the change that may have occured without the intervention. Using the example above, this could be a yield increase for farmers because they have become more efficient in growing vegetables. This change that happens without the intervention, shown by the blue, middle line, is also known as the 'counterfactual;' i.e., the change that would have happened without the intervention. The green (top) line denotes the change that takes place with the intervention. In the agriculture example, this would be the change that occurs due to farmers applying good agricultural practices and appropriate inputs. Thus, the total attributable change

or impact of the intervention is the difference between the change that happens with the intervention and the change that would have occurred without the intervention.

Comparing the counterfactual with what actually happened allows a programme to measure the attributable change that the intervention achieved. Comparing with the counterfactual helps in showing the effect of the intervention but it does not prove how the effect was produced. Thus, the first step towards measuring the attributable change is to prove the causation by measuring each step of change in the results chain as outlined in 3.1.

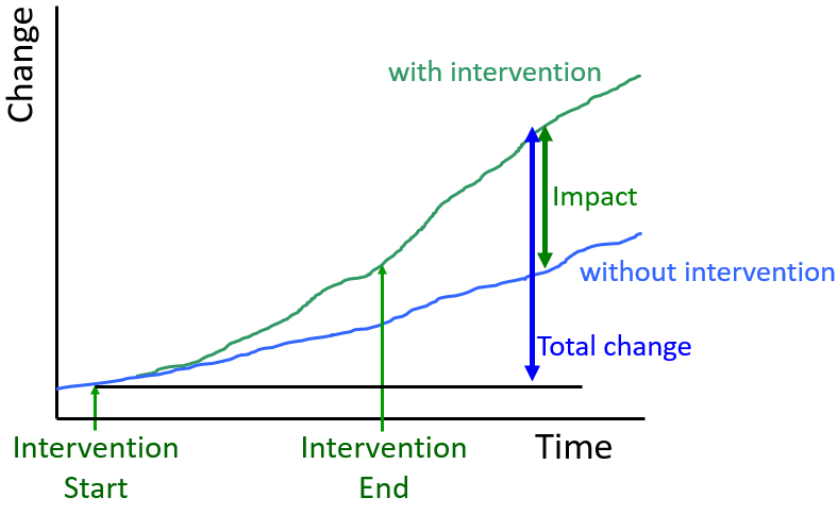

Figure 3 Establishing the counterfactual

Common methods to establish the counterfactual

There are multiple methods to establish the counterfactual. For a detailed explanation on the different methods, refer to 'Measuring Attribution: A practical framework to select appropriate attribution methods.' Table 1 below summarizes the three methods most commonly used by programmes to establish the counterfactual:

Attribution assessment method	Outline of method	When the method is suitable
Before and after comparison with opinion	In this method, you compare the situation before the intervention with the situation after the intervention. The attributable change is then the difference between the baseline and impact assessment data. This is complemented with opinions of key stakeholders to understand why the situation changed.	• If there are only a few known influencing factors that can affect change. For example, the additional income for a tour operator may be due to an intervention which upgraded his services and attracted more clients or it could be due to a price hike he made to match market rates. In this case, the attributable change in income should be assessed based on the increase in number of tourists, holding the price as constant. • If an intervention is introducing a new innovation. For example, if a farmer switches from manual labour to using a mechanized tool for processing, then the attributable change would be

		the additional amount that can be processed within the same time.
Comparing trends	In this method, you analyse trends over a period of time using historical data to check if the trend has changed after an intervention.	• This tool can be particularly useful to assess change for medium or larger enterprises that have good record-keeping. For example, if a company has been tracking their revenue over a number of years, you can compare the trend before and after the intervention to see if a programme had any influence in changing the trend. • If there are reliable historical data available. For example, if a programme intervenes to increase imports of a certain good by reducing trade duty, you can check if there are publicly available historical data on volume of export of that particular good from before the intervention start date.
Comparison Groups	In this method, you identify a group who may have benefited from your intervention (treatment group) and a similar group of people who would not have had access to your intervention (control group). It is most likely that despite having similar characteristics, they do not have the same baseline situation. Thus, you compare the difference between before and after for both groups to assess attributable change.	• If you can identify a similar group of respondents who are mostly exposed to similar external factors. For example, this method is commonly used for assessing attributable change in farming where many external factors such as climate or fluctuating prices affect farmers' incomes similarly.

Table 1 Common methods used to assess attribution

3.4 What if it is not possible to assess attributable change?

The Standard recognizes that there are many instances when it may not be possible for a programme to measure attributable change because it is difficult to isolate the cause of the change. In other words, it may not be possible to quantify the portion of change that can be attributed to the programme. For example, in a programme working towards influencing policy, there may be multiple external factors that also influence the government's decision to change the specific policy, such as an imminent election, pressure from different lobby groups, change in political leadership, or influence from other countries. In such cases, it may be more pertinent to assess the programme's contribution to change, i.e.. showing how the programme contributed to change, rather than measuring the portion of change. This can be done with a contribution analysis.

3.4.1. How to do a Contribution Analysis

Contribution analysis is an approach for assessing causal questions and inferring causality in real-life program evaluations. It offers a step-by-step approach designed to help managers, researchers and

policymakers arrive at conclusions about the contribution their program has made (or is currently making) to particular outcomes. The essential value of contribution analysis is that it reduces uncertainty about the contribution that the intervention is making to the observed results through an increased understanding of why the observed results have occurred (or not!), and the roles played by other internal and external factors.[4]

Thus, contribution analysis is a qualitative method of searching for factors that contributed to the observed change, and of establishing a qualitative narrative evidencing change due to the intervention as one of the factors.

A programme can do a contribution analysis by following the steps below:

- **Measure along the results chain and identify other influencing factors.** Gather evidence of the different changes outlined in the results chain to show how intervention activities may have contributed to desired changes. Consider the simplified example of a results chain, shown in Figure 5. At the bottom it may be possible for a programme to assess their attribution in increasing public private dialogue between the Coffee Exporters Association and public bodies. However, higher level changes (for example. a government simplifying regulations to boost exporters, and then companies increasing export of coffee) are likely to be affected by other external influencing factors, as shown in orange bubbles in Figure 5. So, at this higher level, the programme should try to collect qualitative evidence, such as stakeholder opinions or a timeline of different changes taking place since start of intervention, to show that the programme's work contributed to these changes alongside other influencing factors. The programme should also identify these other influencing factors.

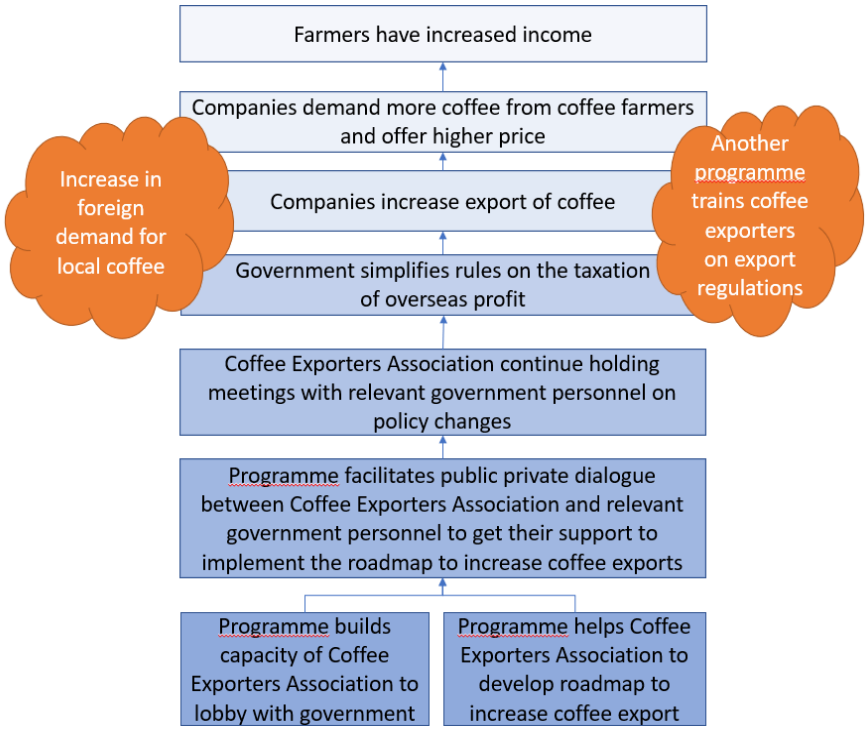

Figure 4 Example results chain of an intervention to increase coffee exports

- **Collect evidence that shows how different influencing factors (programme activities and external factors) have contributed to change.** Along with identifying the different influencing factors, gather evidence to show how these too may have contributed to change. Doing so helps to check the degree of influence of other factors and helps to eliminate some if not relevant. This can be done by conducting in-depth interviews and gathering key stakeholder opinions on influencing factors.

[4] Definition by Better Evaluation

- **Acknowledge any different external influencing factors, such as other programmes or initiatives, that may have contributed to desired changes.** The DCED Standard explicitly asks programmes to mention contribution of other programmes/stakeholders in reporting (mentioned in Control Point 6) to ensure that, at a higher level, programmes are transparent on reporting. This helps donor agencies avoid double-counting.

An example of Contribution Analysis in Market Development Facility (MDF) Sri Lanka[5]

MDF Sri Lanka, a DFAT-funded market systems project, intervened in several ways in the fisheries sector in the Northern districts of Jaffna and Mannar to generate employment in the value-adding fish processing facilities. This support was intended to create jobs in the processing companies, but regular monitoring showed that there was also a sustained increase in the price of blue swimmer crabs (BSC). MDF did a contribution analysis to understand why the price increase happened and to what extent MDF had contributed to this. MDF revised its original results chain to show that its support to three Northern Province-based processors led to increased competition among processors and exporters, which led to an increase in market price for BSC. It also tried to identify what other alternative factors may have contributed to the price hike.

MDF used a mixed method of data collection to gather information on the changes outlined in its results chain. This included looking at time series data on the monthly price for BSC since the start of the intervention, in-depth interviews with the fishers supplying the processors supported by MDF, as well as those that sold to other companies, and key informant interviews (e.g., with traders, exporting companies and seafood experts) to understand industry experts' perceptions of the changes and the likely causes of those changes. MDF also mapped out the price trend from before the intervention to extrapolate how that trend would have continued without MDF intervention, to make a comparison. MDF also investigated the other causes that may have led to the price increase, such as change in international prices for BSC, and reduction in supply of BSC. To critically evaluate whether they were indeed a contributing factor, MDF hired an external consultant to review the existing evidence and provide an opinion on whether and how MDF contributed to increased competition. Having established that MDF likely contributed to a more competitive crab sector, MDF also identified other contributing factors, for example, other programmes targeting fisheries and an increase in the bargaining power of cooperatives.

4. Example Tools and Practices in programmes using the Standard for measuring attributable change

This section shows the most commonly used tools and practices adopted by programmes applying the DCED Standard to assess attributable change.

4.1 Monitoring Plan

Measuring change requires establishing a plan to collect data, ensuring that the plan is of a good quality and subsequently collecting the data using good research practices. Table 2 below shows a commonly used format for a measurement plan, used by programmes applying the DCED Standard. While the format will vary from project to project, each results chain change box will typically show:

- What information will be collected (quantitative information to understand how much change is happening, as well as qualitative information to understand how change is happening and whether it is attributable to project activities)

[5] Contribution Analysis in Market Systems Development - An Example from Sri Lanka

- When the information will be collected (typically, programmes find it most efficient to group together the measurement of different indicators, so that they can just make one visit, even though the time frame for changes due to an intervention varies depending on the type of actor. For example, conducting a baseline of different actors in one go, collecting monitoring information every year again in one go).
- How the information will be collected
- How the indicator will be calculated
- What tool will be used for data collection
- Who is responsible for collecting and analysing the information.

Such plans also elaborate on the attribution strategy, specifying how attribution will be assessed for different actors who are foreseen to be impacted through the specific intervention.

Box from Results chain	Quantitative indicators of change	Qualitative indicators of change	Tools (How to measure)	When to measure			Who measures
				Baseline	Monitoring	Impact assessment	
Attribution strategy							
For partner: **For market actors:** **For beneficiary:**							

Table 2 Commonly used format for a results measurement plan

4.2 Research Plan

When it is time to do baseline or impact assessment research, programmes applying the DCED Standard usually use a detailed research plan that documents the technical aspects of the specific research process. Typically, a research plan includes guidance on the points listed below[6]:

- Purpose/Goal: Why will you undertake this research, what is your objective, your research questions, your hypotheses?
- Researcher(s): Who will be involved in conducting the research?
- Location(s): Where will the information be gathered?
- Population: Who is the research trying to learn about? Approximately how many are in this 'population?' (For example, farmers who purchase inputs from trained input suppliers.)
- Attribution Method: What method(s) will be used to assess attribution? Why?
- Research Tools: How will information be gathered? Why are specific tools chosen?
- Sample size: How many respondents? If appropriate, per location and/or per group of the population (e.g., small farmers, micro farmers, input suppliers etc.) If appropriate, the control

[6] Adapted from Advanced Training Course Material on the Standard for Results Measurement prepared by Hans Posthumus, Aly Miehlbradt, Harald Bekkers (2010).

group or non-affected group should also be described. How was this number decided? Which factors to consider, why and how? See also the DCED Sample Size calculator for more information.

- Sampling composition: How will the respondents be chosen? Why? If appropriate, also describe the control or non-affected group with an assessment of the similarities and differences to the affected group.
- Research risks: What are the key risks anticipated or assumptions made when conducting the research?
- Ethics: What are the ethical or legal issues that need to be considered in doing the research to protect potential respondents and the use of information found through the research? How will they be handled? For example, obtaining consent from respondents, conducting research at a time that is convenient for them, and respecting wishes for anonymity and confidentiality if respondents ask.
- Limitations: What are the limitations of the research in terms of representing the population and gathering accurate information, and what measures (if any) are taken to address them?

Table 3 below shows an example format for such a research plan. The Toolkit for Implementing the DCED Standard includes a worked example as well as a blank template for the research plan table used here.

Research Summary					
Research title:					
Research team:					
Research date:					
Location:					
Purpose of the research:					
Research Methodology					
Key Research Questions					
Relevant respondents who will be interviewed in this research	Types of respondents	Purpose of talking to this respondent	Sample size	Sampling methodology (how selected and justification for size)	Research tool used
Attribution strategy if applicable to this research					
Ethical considerations					

Table 3 Example format for a Research Plan

4.3 Tips on applying Good Research Practice

Table 4 offers some tips on key decision-making that would contribute towards a good survey design.

Decision Making on Good Research Practice[7]		
Decisions	**Considerations**	**Tips**
How intensive should results measurement be?	Potential scale of impact	• The more often you measure, the more likely you are to catch mistakes early. Thus, measure more intensively for the more important interventions where maximum impact is expected.
	Pilot or scale-up stage	• A pilot needs more intensive measurement on expected changes all the way up the chain; during scaling up, the results chain should be verified to see if it is still valid, and a more intensive measurement of outreach/scale and systemic change may need to be added.
	How many different interventions must be measured? Size/budget for each intervention	• Each intervention needs to be measured; however, the programme must take a pragmatic approach when deciding how to measure change in each: • Fewer interventions and larger interventions require more intensive results measurement per intervention • More interventions and smaller interventions require less intensive results measurement per intervention • If there are one or two main interventions (in terms of both size and importance) with some additional, smaller interventions, then more weight should be given to measuring the important, big ones than the many small ones.
	Program budget	• Good monitoring is good management and an investment in being effective – not an overhead. So, it may be appropriate, when working in dynamic and changing markets, to spend 5-10% of the budget on good monitoring.
Which info gathering tools to use?	Triangulate	• Triangulate, within tools (cross checking questions) and among tools (observation + interviews, interviews + records, FDGs + surveys, etc.)
	Nature of the change - attitude, behavior, performance etc.	• Often, attitudes and behavior lend themselves to qualitative assessment while performance can be measured quantitatively. Interviews and semi structured questionnaires offer the option of gathering both quantitative and qualitative information.

[7] Adapted from Advanced Training Course Material on the Standard for Results Measurement prepared by Hans Posthumus, Aly Miehlbradt, Harald Bekkers (2010).

	Ease of observing change	• Easy – relying on observing change, using records is OK • Hard – talking to people: surveys, interviews, FGDs, stakeholder meetings
	Availability of accurate records on change	• If enterprises or other actors maintain reliable records, then access to them could be sought and they could be used. These records should, however, always be triangulated using other tools.
	Depth of understanding needed on change	• The more risky, complex and or innovative the intervention, the more important it is to track and understand changes.
	Ability to use tool effectively – internal capacity, external context	• Internal capacity: For example, FGDs and stakeholder meetings require careful facilitation; surveys require specific skills in questionnaire design, survey management, data analysis etc. • External context: For example, considering what respondents will be comfortable with (e.g., individual interviews, group tools, etc.)? What are the options for outsourcing some info gathering and maintaining quality?

5. Using the Standard Guidance on measuring attributable change

The Standard Guidance on measuring attributable change is split into six control points. The first three control points cover the three stages of results measurement; baseline, monitoring, and impact assessment, which involve collecting both quantitative and qualitative information. These control points are further broken down into compliance criteria in order to guide the process of collecting data for each of these three stages. The fourth control point refers to the use of information from all the above research stages to inform intervention management decision and check whether a programme has a mechanism which links data collection to use. The last two control points on assessing gender differentiated results and measuring unintended impact are 'recommended' rather than 'mandatory', meaning that a programme can pass an audit even if they do not aim to measure these two things.

This section provides further guidance on the compliance criteria for each control point.

Control Point 3.1: Baseline information on all key indicators is collected. (Must)

Baseline information measures the situation at the beginning of the project. This can then be compared to the situation after the end of the intervention, to establish what change has occurred. Baseline information should be collected on all indicators at different levels of the results chain that aim to show a 'change' in the situation after an intervention. For example, the simplified results chain in Figure 6 shows a programme that is streamlining organic fertiliser licensing, with the aim of promoting organic fertiliser use and ultimately increasing crop yield. It would not be sufficient to collect baseline information only on farmers' yield and income (the blue boxes in Figure 6). It would also be necessary to gather baseline information for the middle and bottom boxes. For the green boxes, a baseline would show details for

before the intervention; how many producers were making organic fertilizer, how much was available in the market and how many farmers were using it. This can then be compared to the number of producers making organic fertiliser, and the number farmers using it, after the intervention, to detect any increase. At the bottom level (the grey boxes in the results chain in Figure 6), baseline information should show, before the intervention, what problems producers of organic fertiliser have in getting licenses; how much time it takes, what the existing government regulations are, etc. This will help demonstrate whether the programme really has made the licensing for organic fertiliser easier. This can later be verified by the volume of organic fertilizer sold and the number of organic fertilizer producers active in the market after the intervention.

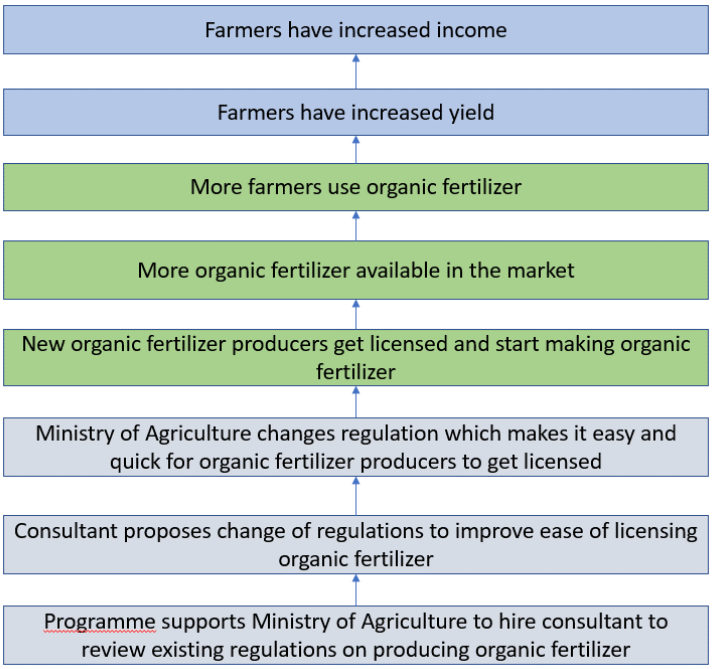

Figure 5 Example results chain of an intervention to increase organic fertilizer use

Baseline information is thus important at all steps in the results chain for determining attribution, and to enable programmes to measure whether predicted changes are actually occurring. Ideally, a programme should collect baseline data once it understands who is likely to benefit from the relevant intervention, but before any results are expected. However, in reality, when a programme is working through multiple actors who are involved in influencing change, it might decide to collect baseline information on these different actors at different points in time (some of which may even be collected retrospectively if necessary). In the simplified results chain example, referred to above in Figure 6, a programme might collect baseline information on how much time it takes for producers of organic fertilizers to get licences before starting the intervention, while it is collecting market intelligence. However, it may then decide to collect baseline information on how many farmers use organic fertiliser before the intervention only when it does the impact assessment. It may do this, for example, by checking with organic fertilizer sellers on how many farmers they were serving before the regulation changed and how many they were then serving in the present.

Planning a baseline:

When planning a baseline, the following questions should be considered:[8]

- **What already exists?** Effort should be made to identify pre-existing data and understand how that can be used for the baseline. This avoids wasting money duplicating data collection. At the same time, projects should always refer back to the results chain to ensure that existing data are relevant. For

[8] Adapted from TradeMark East Africa's Guide to Planning Baselines (2012).

instance, national data on farmer's yields might be lower than the average in a particular area where a project works, in which case it may not be applicable.[9]

- **What indicators will be measured?** This should be informed by the results chain and results measurement plan and should include both qualitative and quantitative indicators.
- **How will impact data be collected?** It is most useful to go back to the same respondents when collecting baseline and later collecting impact assessment data to ensure that there is homogeneity between the two groups to compare a before-and-after picture. The baseline plan should be in line with the specific attribution strategy which will be used to assess programme impact.
- **What's the budget?** Although conducting baselines as cheaply as possible may be tempting, this can be a false economy. If the baseline data cannot be used later to make a comparison with impact data, the money will be wasted.
- **Who will conduct it?** Hiring a consultant can work well, but the project team must still dedicate sufficient resources to support the research. Gaps in understanding the context can lead to inaccurate baselines. Alternatively, the baseline could be conducted by project staff. This has the significant advantage that they will learn directly from the interviews, rather than relying on an external report. It also helps in the future when collecting outcome and impact data.
- **When will it be conducted?** In some cases, a pre-intervention baseline study may not be feasible. This may be because the results chain or geographic area changed significantly during implementation. Or it could be because the programme did not have time or resources to conduct a baseline at the appropriate time. In such a case, a retrospective baseline can help to map the situation before project activities.

How to apply the Standard in practice:

Compliance Criteria:

The official compliance criteria on collecting baseline information, as in the DCED Standard Guidelines, are as follows:

- *Plans to collect baseline information for each intervention results chain, covering market actors and beneficiaries, exist.*
- *The plan to collect baseline information is thorough, realistic, timely and in accordance with good research practice.*
- *Baseline information for each intervention results chain, covering market actors and beneficiaries, has been collected, analysed and reported in a timely manner using good research practices.*

The first compliance criterion checks if a programme has a plan for collecting baseline information on individual interventions. Typically, this plan is outlined in the programme's results measurement plan, as exemplified in Table 2. This shows all the indicators for which baseline information needs to be collected, followed by how it will be collected (which data collection tool) and when it will be collected. In practice,

[9] it is important to check the authenticity of pre-existing data. Baseline information should represent the situation just before the beginning of an intervention. Therefore, existing data collected two years previously may not be representative of the prevailing situation and may need to be verified.

programmes may choose to combine the data collection for different interventions together to save time and resources specifically if the interventions are reaching the same group of people at a similar timeline. For example, if a skills development programme is targeting the same youth with two different interventions where one intervention is about building their skills level and the second intervention is about matching them with relevant jobs, it makes sense for the programme to collect all the relevant baseline information for the youth in one go.

The second and third compliance criteria check if a programme has applied good research practice in collecting and analysing baseline information for all market actors involved in an intervention. This means collecting data on time; applying a reasonable attribution strategy during baseline data collection (for example, collecting data on relevant timelines, or collecting baseline data for comparison groups); collecting information from a relevant and reasonable sample; having some checks for quality control of the collected data; and analysing the data clearly. Some programmes find it useful to document the data collection process using a research plan template as shown in Table 3. Others might also use simpler Excel sheets to document the process as well as to analyse data. Ultimately the Standard does not require use of a particular format, but rather checks for transparency and application of good practices in baseline data collection.

Control Point 3.2: Monitoring information on all key indicators is collected. (Must)

Monitoring is defined by the OECD DAC Network on Development Evaluation as a continuing function that uses systematic collection of data on specified indicators to provide the programme with indications of the extent of progress the programme is achieving. Programmes applying the DCED Standard often refer to monitoring as 'all monitoring activities that take place between the baseline and impact assessment surveys'.

The purpose of monitoring is two-fold:

1. To understand if and how changes that are reflected in a results chain take place during the intervention period, and enable timely action if things are not on course. For example, consider an intervention of training-of-trainers in a skills institute, so that the trained trainers can teach students better. Collecting monitoring data to check trainers' skills level after training will allow the programme to check if the intervention has indeed built trainers' capacity to a desired level and, if not, to consider supplying booster training. This opportunity would be missed if the programme, for example, only conducted an impact assessment towards the end of the programme.

2. To inform when and how to do final impact assessment. Monitoring allows a programme to check what changes are happening in practice and to test how such changes can be measured and attributed to programme activities. For example, if monitoring of a certain intervention reveals that it has not been as successful as hoped in reaching a large number of beneficiaries, a programme may choose not to invest in a big impact assessment.

Planning monitoring:

When planning monitoring, the following should be considered:

- **Monitor all the way up the results chain.** It is good practice to collect monitoring information at all levels, starting from activities, outputs and outcomes and impact at the beneficiary level. Doing so helps to get a good indication of whether an intervention is on-course to reaching results.
- **Build an understanding of change based on relatively small samples and triangulation of information from different sources.** To keep monitoring manageable, it is more practical to do short bursts of research where more emphasis is placed on investigating how and why change is happening. The credibility is built through the depth of information and triangulating information from different information points, rather than a large sample size.
- **Share monitoring responsibilities between implementation and results measurement teams.** Having a common calendar and sharing monitoring responsibilities helps programmes divide workloads between different teams. For example, the results measurement team can help in articulating a checklist of questions to ask to partners. The implementation teams can then use this to collect information from the partner as part of a routine partner visit.
- **Systemize monitoring data collection.** If monitoring activities are not planned, they often run the risk of not being collected, or being collected but lost in the institutional memory. Adding monitoring data collection needs to results measurement plans (such as shown in Table 2) allows programmes to institutionalize monitoring data collection.
- **Be transparent in reporting monitoring findings.** Monitoring findings, such as results of an early impact study based on small samples, are sometimes used to report on results, which may be extrapolated to bigger populations later in the process. It is important to be very transparent in reporting such results by specifying sources, calculations and how results may be verified later (for example, through a planned impact assessment towards the end of the project), so that the results are not misinterpreted to represent a bigger population.

For more detailed tips on monitoring, refer to the DCED Practitioners' Notes on monitoring, 2018.

How to apply the Standard in practice:

Compliance Criteria:

The official compliance criteria on collecting monitoring information, as in the DCED Standard Guidelines, are as follows:

- *Plans to collect monitoring information in a timely manner for market actors and beneficiaries exist.*
- *The monitoring plan is timely, uses appropriate tools and processes and takes attribution into account for all levels.*
- *Monitoring information for each intervention results chain and covering market actors and beneficiaries has been collected, analysed and reported in a timely manner using good research practices. Attribution has been assessed.*

The first compliance criterion checks if a programme has a plan for collecting monitoring information on individual interventions. Most programmes outline this in the results measurement plan, as shown in

Table 2. Some programmes have a more general outline of monitoring processes in their Results Measurement Manual and then have the plans reflected in their calendars for individual intervention monitoring.

The second and third compliance criteria check for the quality of the monitoring plan and its execution. This means that the plan should outline monitoring data collection for different actors involved in each intervention and show an assessment of causality by checking relevant quantitative and qualitative information for all the change steps outlined in the results chains.

Control point 3.3 Impact assessment is conducted to assess attributable changes in all key indicators in the results chains using methods that conform to established good practice. (Must)

Most programmes applying the DCED Standard conduct impact assessment of specific interventions by outsourcing data collection to enumerators or specialist contractors at a later stage in implementation, to measure impact with some quantitative rigour. If multiple interventions are clustered together in the same geographical area and reach the same group of people at the same time, programmes often find it useful to assess the impact simultaneously through the same study.

Planning an impact assessment:

When planning an impact assessment, the following should be considered:

- **If baseline data have been collected, revisit the same group.** If a baseline exists, it makes most sense to go back to the same respondents to collect impact information. When revisiting respondents in an impact assessment, it is important to include some screening questions to verify if indeed that group has been impacted. For example, consider an intervention where a programme trains government extension workers on good agricultural practices, where baseline information has been collected for farmers who get advice from those government extension workers. When conducting the impact assessment, it is important to check with the farmers whether they continue to get advice from the same extension workers. If they now get information from other untrained government extension workers, then the farmers would not fall into the category of potential beneficiaries.
- **Use monitoring information to plan impact assessment.** Learnings from monitoring should inform design of impact assessment. This will ensure that in-depth information on what has worked and what has not worked in an intervention can inform questionnaire design, attribution tool choice, sample population choice, sample method and investment levels.
- **Conduct a pre-test and train enumerators.** Pre-testing questionnaires is a vital step in questionnaire design. Impact assessments are often conducted by doing surveys which use short, focused questions that can later be quantified. Unlike in-depth interviews, there is less scope to probe. Pre-testing the questionnaire allows a programme to check how people respond to specific questions and then correct the questionnaire if needed. It is also important to train the enumerators who will be executing the research, especially when impact assessment is outsourced and enumerators are less familiar with the contracting programme.
- **Collect information from a reasonable and representative sample.** The DCED has produced specific guidelines on how to select sample sizes, and an accompanying sample size calculator. This guidance

provides a simple, practical tool to help programmes using the DCED Standard to select the appropriate sample sizes for quantitative surveys. In some cases, programmes can do impact assessments using very small sample sizes as long as it provides a justifiable reason for doing so (for example, in disaster situations or a remote location). However, in such case the data should ideally be validated by triangulating with different sources or by having a plan to do a follow-up assessment to increase sample size.

- **Apply good quality control measures in collecting data.** Programmes should conduct systematic quality control measures to ensure that quality of data is not compromised. This includes managing field plans for data collections, doing spot checks and good data-cleaning once information has been collected. Programmes also find it useful to use data collection tools such as Kobo, which allows a supervisor to supervise the data collection process while it is being executed to check if enough time is spent on collecting information, if all questions are being answered, and the quality of responses.
- **Develop a data base to enter data.** Most programme applying the Standard develop a data base using statistical analysis computer software, such as Excel, SPSS, STATA or similar.
- **Triangulate findings with what is already known.** It is essential to check if impact assessment findings match the findings that have been collected through monitoring and/or other research efforts, to ensure that all research done on a particular intervention portrays a coherent story of what happened in reality.

How to apply the Standard in practice:

Compliance Criteria:

The official compliance criteria on collecting monitoring information, as in the DCED Standard Guidelines, are as follows:

- *Plans to assess the impact on market actors and beneficiaries of each intervention, in a timely manner, exist.*
- *Plans to assess the impact on market actors and beneficiaries for each intervention are thorough, realistic and in accordance with good research practices. The plan illustrates how attribution will be assessed.*
- *Impact information for each intervention has been collected, analysed and reported in a timely manner using good research practices. Attribution has been assessed.*

The first compliance criterion checks if a programme has a plan for collecting impact information and assessing attribution for individual interventions. Exceptions may be made for certain interventions, such as those in which a programme is expecting little, or no impact based on monitoring. An example of this results measurement plan is outlined in Table 2, which would show all indicators for which impact information needs to be collected, followed by how and when it will be collected, including information on which data collection tools will be used.

The second and third compliance criteria check if a programme has applied good research practice in collecting and analysing impact information for all market actors involved in an intervention. This means collecting data on time, applying a reasonable attribution strategy, collecting information from a relevant and reasonable sample, having some checks for quality control of the collected data, and analysing the

data clearly. Most programmes find it useful to document the data collection process using a research plan template as shown in Table 3.

Control Point 3.4 The programme implements processes to use information from monitoring and results measurement system in management of interventions and decision making. (Must)

Programmes that apply the DCED Standard often cite that the main value of setting up a results measurement system is that it allows them to establish a learning culture where information on results is used to improve intervention implementation and strategies. This requires programmes to develop a system for effective use of information from results measurement in decision-making, and to build a learning culture which provides the incentives and structure to do so. Programmes set up such a system by structuring regular review meetings to discuss findings, and having agendas for such meetings so that programme staff can prepare in advance and collect results information to discuss in these meetings.

How to apply the Standard in Practice:

Compliance Criteria:
The official compliance criteria on collecting monitoring information, as in the DCED Standard Guidelines, are as follows:

- *Mid and senior level programme staff describe the process for using information collected through monitoring and impact assessments*
- *Mid and senior level programme staff use the information collected through monitoring and impact assessment to manage interventions and the programme.*

This control point checks whether staff provide clear explanations of how they use information in management processes and for key decision making. It relates to the knowledge and practice of programme staff around use of results, according to the system developed under Control point 7.1. Please therefore refer to the Implementation Guideline for Managing the system for more information on the basis for this Control Point.

Control Point 3.5 The programme has a system for assessing and understanding differentiated results by gender. (Recommended)

By understanding how interventions affect all genders, especially men and women separately, programme managers can gather information which helps to maximise their effectiveness and mitigate any potential negative effects for particular genders.

In general, almost all programmes applying the DCED Standard disaggregate data by sex or gender. Most often, programmes find it easiest to collect and disaggregate data on the common impact indicators:

- Scale – data are divided to show the relative numbers of men and women benefitting.
- Net Income – data are divided to show the additional net income accruing to men and accruing to women.

- Net Jobs – data are divided to show the number of FTE jobs that went to men, and the number that went to women.

However, disaggregated results alone are usually not enough to understand how results vary by gender. For example, small farms are often family-owned, which can make it meaningless to try to disaggregate results by sex or gender. Consequently, disaggregated data should be seen as the starting point for an effective system for understanding results by gender, rather than all that is required. Thus, the Standard recommends that programmes that explicitly aim to promote women's economic empowerment (WEE), for example, should collect additional qualitative data which helps to understand how their interventions may affect women differently to men, as they are typically more marginalized. This might include, for example, interviews or focus group discussion with women respondents to understand who participates in the supported enterprises, the different roles played by women, whether women have any control on the income that the household receives, or whether a change in income changes their bargaining power. Programmes that focus on WEE find it useful to assess impact of the intervention on women in two areas[10]:

1. Access - a person's means or opportunity to approach assets needed for realising economic opportunities, such as: information, markets, infrastructure, credit, skills, or agricultural inputs. To measure women's access, programmes should check whether a specific intervention has helped increase women's access to relevant products or services. For example, if a programme ran a training course using women trainers, did this increase the number of women participating in the training?
2. Agency - a person's ability to make effective choices and to transform those choices into desired outcomes. Agency can be understood as a person's ability to take advantage of their access to assets, in order to realise economic opportunities. To measure this for women, programmes may check if a specific intervention has helped increase a women's choice, decision-making or control over resources. For example, if a programme carried out an intervention to increase women's knowledge of a farming practice, did it lead to agency over budgeting and expenditure related to farming decisions?

More guidance on how to assess impact can be found in Practical Guidelines for Measuring Women's Economic Empowerment in Private Sector Development and Synthesis Document: How to integrate gender and WEE into PSD programmes.

[10] Definition of access and agency adapted from Practical Guidelines for Measuring Women's Economic Empowerment in Private Sector Development

SEEP Network's Practical Tools and Frameworks for Measuring Agency in Women's Economic Empowerment[11]

While different factors need to be assessed to capture various aspects of agency, the following three are particularly useful for WEE programmes to consider during design and monitoring:

1) Improved well-being - it is important to understand whether a particular economic change results in satisfaction or dissatisfaction. Certain outcomes from shifts in workload may reduce a woman's well-being and can undermine program activities if misunderstood. Some pre-conditions are essential to achieving positive changes in agency. If a woman begins in a position of low power with limited influence on income allocation, then an increase in household income may show a positive shift only in well-being, without affecting other domains of her life, and therefore cannot be claimed as full economic empowerment. Similarly, if program activities positively impact other aspects of her life, but show an adverse impact on well-being, then programs similarly need to re-evaluate whether this constitutes real economic empowerment.
2) Influence on gendered social norms - programs should assess whether activities will encourage women to engage in new roles in new markets, or whether women would move into traditionally male roles. Depending on the intensity of the shift, household and community members may push back because of entrenched gendered social norms. This must be considered, as such activities could increase the risk of gender-based violence. Appropriate mitigation strategies should be put into place.
3) Perceived Recognition - this assesses the position, visibility and perceived recognition of women at the household and community levels. Greater recognition often builds confidence and contributes positively to discussions and decision-making.

How to apply the Standard in Practice:

Compliance Criteria:

The official compliance criteria on collecting monitoring information, as in the DCED Standard Guidelines, are as follows:

- *Plans to assess and understand differentiated results by gender of each intervention exist.*
- *Plans to assess and understand differentiated results by gender are relevant and appropriate.*
- *Gender differentiated results for each intervention have been collected, analysed and reported in a timely manner.*

The first compliance criterion checks if programmes have a plan in place to assess results by gender for all interventions. The second compliance criterion checks the quality of the plan (relevance, appropriate methods, sampling) to collect information for assessing gender differentiated results. The third compliance criterion checks if qualitative and quantitative data are collected, analysed and reported based on a programme's outlined gender parameter. For example, if an intervention aims to increase women's access to digital financial services so that they have more control over personal finances, then the results should be measured by assessing how many women are using such services and how it affects control over their financing.

[11] Anand, Mecagni and Piracha (2019) SEEP Network's Practical Tools and Frameworks for Measuring Agency in Women's Economic Empowerment

Control Point 3.6: The programme monitors to identify unintended effects. (Recommended)

By using a results chain, programmes set out what they expect to achieve, and how they expect their activities to benefit the poor. Market systems, however, are complex and unpredictable. For most programmes working in market systems, consequently, results chains will just be a best guess, and are likely to change as the intervention develops. Other formats might be developed over time that demonstrate the pathway to systemic change better than results chains can. Therefore, it is necessary for programmes to be alert to any unintended effects (both positive and negative) of their intervention, as well as to intended effects. This presents several challenges to a monitoring system, which is why this is currently a 'recommended' rather than mandatory control point. While a predicted change can be assessed using surveys, reporting, and other common tools, it is much harder to collect information on unintended effects. Without knowing what these unintended effects are, a programme would not know what questions to ask in a survey, what information to request in a report, or what topics to cover in a key informant interview. Monitoring unintended effects, consequently, relies primarily on qualitative data from unstructured interviews, and the alertness and observations of staff throughout their normal work. The latter can be a particularly powerful way to capture information about the intervention. Consider the following story:[12]

A field coordinator is walking to her truck after just wrapping up the second of ten planned rural seed fairs she has organized that month. She sees a number of producers, talking with two reps from a new seed supplier. As she passes, she overhears them discussing the skit on good agricultural practices. They say that it was pretty funny, and they learnt a lot.

This kind of knowledge from field staff is ***tacit knowledge***; understanding developed through experience, difficult to transfer because its foundations are built implicitly. Importantly, the headline impression or judgement of tacit knowledge is that it is easy to communicate to others. However, tacit knowledge is difficult to officially justify. In the example above, when the field coordinator picks up her phone to tell her manager about the fair, she will probably be able to say that it went well and that momentum amongst market actors for change is building well. She might not be able to explain why she thinks that - she might not have been conscious of the effect on her impressions of seeing the producers crowd around the input supplier reps.

Staff should be encouraged to continually look out for unexpected effects of the intervention, and to reflect on what this means for the intervention results chain. Morcrette and Pennotti (2011) recommend that, in order to use tacit knowledge, programmes should ensure that their staff understand the programme logic, as set out in the results chain or programme level theory of change. In particular, they should be aware of the 'key assumptions' that need to be monitored. This will help them understand what they should be looking out for. Tacit knowledge should be documented where possible, in particular where it is used to make a decision. This will leave a paper trail that allows programme staff to bring together observations from multiple sources.

[12] Adapted from Morcrette, A and Pennotti, C., Know What You Know: Harnessing Tacit Knowledge in Value Chain Monitoring. 2011, The Groove Learning Network

Capturing unexpected changes in Samarth-NMDP

Samarth-NMDP, a UK FCDO market systems programme in Nepal, recognises the importance of capturing unexpected changes. They have developed two processes to try and tap into that knowledge: an observations diary and an activity log. The diaries and logs require individual staff to document relevant information from market player interactions and insights from field visits, so that these can be discussed among the whole project team at the next available opportunity. Diaries and logs effectively constitute a 'communal memory' for each project team - of market intelligence and insight as well as a narrative of a particular partner's ownership over what they are experimenting with (for sample contents of the diary and log, see Annex B). They are crucial components of the programme's approach to learning and knowledge management, and their utilisation ensures a flow of information and discussion points for debate in quarterly and monthly meetings.

Observation diary excerpt[xxvi]

Date	Type of entry	Diary entry
10-Apr-13	General Market Observation	There is a severe shortage of ginger seeds in Makwanpur at present. Due to poor production (quality and quantity) this year, farmers do not have enough quantity of quality seeds for this planting season. According to Mrs Ram (ginger trader) 40 tons of high quality seeds have been collected from Makwanpur and transported to Ilam by FAO.
12-Apr-13	General Market Observation	On average 75 tons of ginger passes through the Birgunj border to India on a daily basis during December to February. Two officers from the Plant Quarantine office provided this information which is in contrast to the previous information provided by traders from Makwanpur - that ginger trade through Birgunj border is limited due to problems *en route*.

Source: Ripley & Nippard. (2014). *Making Sense of 'Messiness'.* Samarth-NMDP/Springfield Centre. www.enterprise-development.org/wp-content/uploads/Samarth-Bangkok-5Mar14.pdf

How to apply the Standard in Practice:

The official compliance criteria on collecting monitoring information, as in the DCED Standard Guidelines, are as follows:

Compliance Criteria:

- *Plans to collect, analyse and report monitoring and impact information on unintended (positive and negative) effects exist.*
- *Programme staff use information on significant unintended effects, if any, to review interventions.*

The first compliance criterion checks if the programme has a plan and/or tools and/or processes to monitor and assess positive and negative unintended effects of interventions. The second compliance criterion checks if this plan is put into effect and whether programme staff can give examples of what unintended effects have been discussed in their interventions.

6. Resources

Baselines

TradeMark East Africa guide to making baselines, 2012

Profit Zambia Impact Assessment: Baseline Research Design, USAID 2006

Measurement System

Toolkit for implementing the Standard, DCED

TradeMark East Africa Guide to Monitoring Plans, 2012

Data Collection

Practical guidelines for conducting research, DCED 2015

Practical advice for selecting sample sizes and Sample Size Calculator, DCED 2015

Monitoring Program Progress in M4C, Nabanita Sen Bekkers DCED 2015

Gathering Information from Businesses, Practitioners' Notes on Monitoring and Results Measurement, Alexandra Miehlbradt and Hans Posthumus 2018

Using Technology in Monitoring and Results measurement, Practitioners' Notes on Monitoring and Results Measurement, Alexandra Miehlbradt and Hans Posthumus 2018

Transparency, Reproducibility and Ethics Policy in conducting research, 3ie 2021

Measuring Attribution and Contribution

Measuring Attribution: a practical framework to select appropriate attribution methods, Hans Posthumus and Phitcha Wanitphon, 2015. This includes four sub cases:

- The intervention of MDF with Acelda in Timor Leste, illustrating the use of a before and after with opinion method
- Samarth-NDMP intervention in the ginger sector in Nepal, illustrating the use of a quasi-experimental method.
- Propcom Mai-Karfi (PM) intervention in the tractor market in Nigeria, illustrating the use of comparison groups.
- The Alliances Lesser Caucasus Programme (ALCP) in Georgia, illustrating how a single impact asssessment could be used to assess attribution for multiple interventions

Contribution Analysis, Better Evaluation 2008

Contribution Analysis in Market Systems Development - An Example from Sri Lanka, Springfield Centre 2019

Monitoring Culture

Building a Learning Culture – The Case of MDF in Fiji, Aly Miehlbradt 2017

Using Information on Results in Programme Management – The case of Samarth-NMDP in Nepal, Tim Stewart, Sanju Joshi and Alexandra Miehlbradt 2017

Measuring Impact on Women's Economic Empowerment

Practical Tools and Frameworks for Measuring Agency in Women's Economic Empowerment, Mansi Anand, Anna Mecagni and Maryam Piracha for SEEP 2019

Audit:

Audit Pass Note 3: Measuring Attributable Change DCED 2021