Improving VFM and sustainability in WASH programmes (VFM-WASH)

How to do Value for Money analysis for Water, Sanitation and Hygiene (WASH) programmes

Draft guidance note (May 2015)

Abstract

This "how to" note provides practical guidance on how to analyse value for money (VFM) in Water, Sanitation and Hygiene (WASH) programmes. It takes readers through a step-by-step approach to produce and analyse VFM indicators for WASH programmes, based on examples. It also provides guidance on how to interpret results of the VFM analysis.

The VFM-WASH project

This note is an output of the VFM-WASH project, which stands for "Value for Money and Sustainability in WASH programmes". It is a two-year research project funded by DFID, which entails carrying out operational research into DFID's WASH programmes in 6 countries. A consortium of 5 organisations, led by OPM, has carried out the work. Research Partners include the University of Leeds, Trémolet Consulting, the London School of Hygiene and Tropical Medicine and Oxfam.

The project has 2 main objectives:

1. To identify how VFM and sustainability can be improved in DFID-funded WASH programmes through operational research in six countries (Bangladesh, Ethiopia, Mozambique, Nigeria, Pakistan and Zambia). In each of these countries, the project team conducted a VFM analysis of a DFID-funded WASH programme. The focus programmes were implemented by large organisations such as UNICEF, by small NGOs or by the country's government itself;
2. To assess the sustainability of rural WASH services in Africa and South Asia by carrying out nationally-representative household surveys in 4 countries (Bangladesh, Ethiopia, Mozambique and Pakistan), alongside gathering secondary data for a larger group of countries (e.g. existing surveys and Water Point Mapping initiatives).

See project website for more information: http://vfm-wash.org

Acknowledgements

This note was written by Sophie Trémolet and Marie-Alix Prat (Trémolet Consulting), together with Ian Ross (OPM). It is based on a previous methodological note that had received inputs from consortium members, particularly from Barbara Evans (University of Leeds).

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List of Abbreviations

CLTS	Community Led Total Sanitation
DFID	Department for International Development
DH	Direct hardware
DS	Direct software
IPS	Indirect programme support
JMP	Joint Monitoring Programme
M&E	Monitoring and Evaluation
NAO	National Audit Office
NGOs	Non-Government Organisations
O&M	Operation and Maintenance
RIU	Research into Use
S	Sanitation
VFM	Value For Money
W	Water
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation

Introduction

1.1 What is Value for Money and Value for Money analysis?

The UK Department for International Development (DFID) defines Value for Money (VFM) as "maximising the impact of each pound spent to improve poor people's lives" (DFID, 2011). This echoes the UK National Audit Office's definition, which defines VFM as being "the optimal use of resources to achieve intended actual outcomes". A key element in both definitions is to make the best use of available resources to achieve sustainable development outcomes.

VFM can be measured on the basis of a set of standard indicators, which can help programme implementers (and their funders) assess whether or not their programmes are making the best use of available resources. Answering this question is not an easy task: it requires conducting a "VFM analysis", i.e. collecting and analysing data on the costs and results of the particular programme and interpreting the VFM indicators generated, by comparing them with those of other programmes.

A key objective of conducting a VFM analysis is to help managers improve programme performance. It can give programme managers useful metrics to quantify the effects of challenges they observe on the ground and identify the best interventions to address those challenges, which could include the reallocation of resources.

Crucially, a VFM analysis is not necessarily about saving money and reducing unit costs: it is about maximising actual outcomes and impacts. Whilst the VFM of a programme could sometimes be improved by reducing the costs of certain inputs, greater and more sustainable actual outcomes can also be delivered by spending *more* on certain inputs.

Interpreting the results of a VFM analysis requires putting VFM indicators into context. Indeed, costs and results are context-specific: the per capita cost involved in drilling boreholes in a remote part of arid northern Nigeria will inevitably be higher than in a community near a major town in the more accessible southern part of the country. In this case, high input costs do not necessarily mean that the programme could be run in a more cost-efficient manner: they would simply reflect different operating conditions.

Therefore, a VFM analysis should consider key contextual elements of the programme: it is essential to gather as much information as possible on the operating conditions of the programme, its operating modalities and approaches. Therefore, it is strongly recommended that a VFM analysis be considered as a tool to be added to the essential toolbox of programme managers and evaluators rather than being considered as a stand-alone piece of analysis.

Because VFM analysis is still a relatively new idea, particularly in the WASH sector, this note provides a framework and guidance to conduct VFM analysis in the specific context of WASH programmes being implemented in developing countries. It is hoped that this methodology can be widely adopted by WASH programme analysts and evaluators so that data against a common set of common VFM indicators can gradually be built up and shared.

The goal of developing a standard and shared VFM methodology for the WASH sector therefore lies at the heart of the Research-into-Use (RIU) agenda of the VFM-WASH project.

1.2 Who is this note for?

The target audience for this note includes:

- ***Programme implementers*** (NGOs, agencies or governments) looking to conduct internal VFM analysis for programme management and to improve the use of available resources so as to maximise results;
- ***Programme funders*** (a donor or a ministry) looking for information on the efficiency of their funding. This note could for example be used as a basis for writing TORs for hiring consultants to conduct the VFM analysis component of a programme evaluation or a stand-alone VFM analysis or for designing a monitoring and evaluation (M&E) framework that would allow collecting essential data for VFM analysis;
- ***Consultants*** contracted to conduct the VFM analysis of a WASH programme or hired to establish an M&E framework that can provide the basis for VFM;
- ***External researchers*** who want to better understand the effectiveness of alternative approaches to delivering WASH programmes.

The proposed approach can be applied to programmes that have distinct water, sanitation and hygiene components, or any of the various combinations of such components. It can be applied to programmes with different sizes and implementing arrangements, including programmes implemented by a small NGO in a specific District, a programme implemented by UNICEF in several regions, or a national programme managed by the government.[1]

The proposed method is better suited to the analysis of service delivery programmes rather than to the analysis of programmes with a strong capacity development or advocacy element. However, the main steps of the approach can still be applied for these types of programmes. The analysis can be carried out for ongoing programmes (to improve programme performance) or for completed programmes (for *ex post* evaluation and learning purposes).

Conducting a VFM analysis requires getting access to the relevant primary data and to enough qualitative information to make assumptions about the allocation of costs to different types of activities and results (outputs, outcomes and impacts). For the vast majority of programmes, it is unlikely that robust VFM analysis can be done based only on publicly available secondary data: it is therefore essential to engage with programme implementers and stakeholders.

1.3 Why is VFM analysis important and how can it be used?

Many organisations in the WASH sector claim to undertake performance-based management, but few do so in practice. Numbers of outputs and “beneficiaries” are often reported without enough supporting evidence, and without enough attention paid to whether such numbers were achieved in the most efficient, cost-effective and sustainable manner. This is a symptom of a broader problem, which is that, in general, some of these organisations do not have an integrated system for monitoring expenditure on inputs, processes, outputs and outcomes jointly and in a detailed manner.

[1] In the note, to keep explanations short and simple, the hypothetical programmes given as worked examples are discrete NGO projects where it is easier to connect inputs to outputs. This is in contrast with national programmes where complex public financial management systems and patchy sector monitoring databases complicate matters significantly. Such methodological complexities relating to this type of programmes are referred to in this note.

The primary demand for VFM analysis is currently coming from funders (donors or domestic governments). Some funders have started requesting that VFM analysis be performed for reasons of accountability (e.g. to tax-payers, to their own funders, etc.), particularly when programme implementers are public agencies or NGOs that do not necessarily have a "VFM culture" to start with. However, most VFM analyses done for donor reporting are performed in an *ad hoc* manner and are relatively rough. For example, many consist of calculating the overall unit costs of a programme, by dividing total programme costs by the estimated number of beneficiaries. This is a crude way of doing things, as compared to carrying out a detailed allocation of each cost item to the specific activities and outputs undertaken by the programme, in relation to the actual number of people reached sustainably.

To improve the quality of VFM analysis in the WASH sector, what is called for is a gradual increase in the level of detail and accuracy of VFM analysis being performed. From a funder's perspective, the value of such analysis will increase when a large pool of comparative examples is built, from different countries, across years, in different sectors, etc. To make this kind of VFM analysis viable in practice, it should ideally be conducted as part of a broader evaluation activity (preferably an evaluation during the life of a programme, either yearly or mid-term). Official evaluators would usually get better access to data and have the opportunity to gather information (including qualitative) on other aspects of the programme so as to facilitate the interpretation of results. In this context, VFM analysis should be incorporated in standard ToRs for programme evaluations: the present "How to do" note can provide a basis for such standard TORs from an external evaluation perspective. Nonetheless, it is important to note that VFM analysis is *not* an evaluation in itself – the framework is analytical rather than evaluative.

Second, when donors start demanding "VFM analysis" on a more regular and consistent basis, programme implementers will start adopting this as part of their standard "*modus operandi*" and will start seeing how to use the data to improve programme management. VFM analysis can support performance-based management by giving managers crucial quantitative metrics, backed up by qualitative analysis. By comparing a poorly performing programme against a higher performing one with similar objectives and activities in the same country, a manager can identify key VFM drivers and areas in which the worse-performing programme could be improved. Programme implementers could then gradually develop the systems to allow them to address the questions they need to answer so as to improve programme management. This will take time and effort, given that the WASH sector is behind in this area when compared to, for example, the health sector.

Programme implementers may of course decide to do this totally independently from funders, particularly in the case of those that are operated on the basis of more "private sector" principles. However, they would also need guidance on how to do it so as to compute indicators that are of interest to society at large (such as on sustainability or equity).

A potential barrier to transparent VFM analysis across the sector is the fact that programme managers may fear that data about the programmes they are currently managing could be misinterpreted or taken out of context. To address this concern, this note aims to show that a transparent and consistent methodology can be applied, to reduce the risk that data be computed in very different ways and misinterpreted. The objective of such a shared methodology is to make metrics more comparable, while also emphasising that the context in which a programme is undertaken (geographical, socio-economic or otherwise) can be the single biggest determinant of its costs.

The output of a VFM analysis should therefore not just be a series of quantitative indicators: the exercise in itself (and the associated discipline of identifying and analysing hard numbers) must engage with programme stakeholders in order to deliver learning.

1.4 Structure of this note

This note is structured as follows:

- **Part A – Value for Money: a Conceptual Framework -** presents the concept of Value For Money, its components and key indicators. It highlights the importance of benchmarking and qualitative analysis in order to put the results of VFM analysis into context.
- **Part B – Conducting a VFM analysis in practice –** provides practical guidance for carrying out the VFM analysis of any WASH programme (with particular emphasis on rural programmes). The process of carrying out this analysis has been broken down into five main steps, although all these steps may not necessarily be relevant, depending on the context of the analysis

In addition:

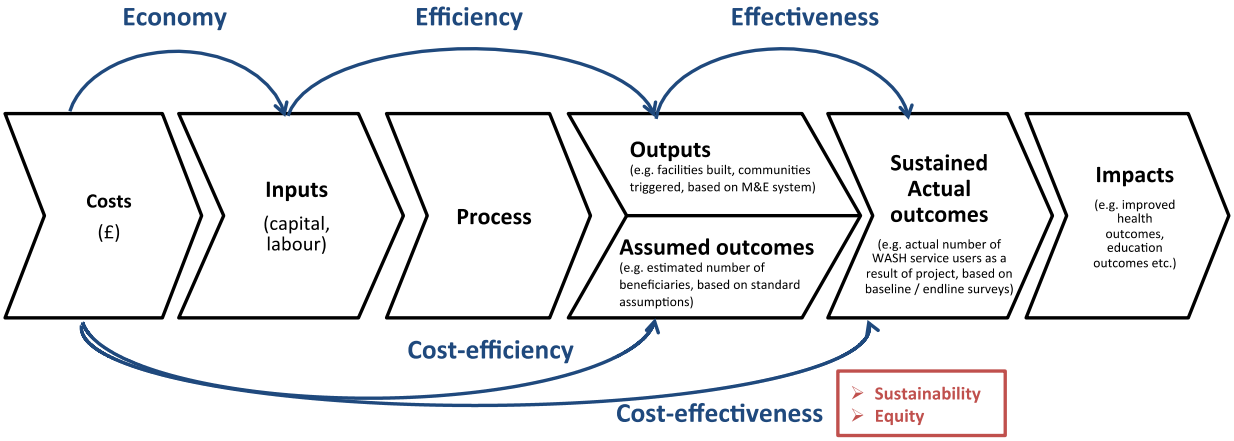
- Annex A contains a glossary of key terms;
- Annex B presents a worked example of VFM Analysis;
- Annex C contains some useful tools to support the VFM analysis.

Part A - Value for Money: a conceptual framework

A.1. Key components of a VFM analysis: results chain and indicators

The VFM conceptual framework is based on a logical 'results chain', which explicitly sets out the results to be achieved by a given programme. Figure 1 below presents the main elements of this results chain.

Figure 1. The WASH results chain



The results chain is composed of seven main elements:

1. **Costs** – the financial costs of inputs;

2. **Inputs** – the resources used, in terms of finance and staff time (capital and labour);

3. **Process** – the process by which inputs are transformed into results. The process can be the object of a programme evaluation (which would be useful as a source of qualitative assessment) but it is not quantified through the VFM analysis;

4. **Outputs** – the direct deliverables of the programme (number of water and sanitation facilities built, number of activities implemented such as CLTS triggering, etc.);

5. **Assumed outcomes** – the *assumed* outcomes resulting from the outputs, e.g. the number of people assumed to be served by a new water point, based on existing standards and assumptions at country level;

6. **Sustained actual outcomes** – the *sustained actual* outcomes, i.e. the actual change in poor people's lives over time, such as the number of new people moving from using an unimproved water point to an improved one. The key difference with "assumed outcomes" is that "sustained actual outcomes" are measured based on survey data at different points in time (i.e. 6/12/36 months after an intervention, which needs to be compared to a baseline) and can therefore capture the sustainability dimension. Such data is only available if robust M&E and data collection frameworks are in place, which is seldom the case, at least in the case of the six programmes analysed by the VFM-WASH project (it was only in the case of the SHEWA-B programme in Bangladesh that this type of information was available).

7. **Impacts** – the longer-term impact of the WASH programme, including the impact on health and education, e.g. reduced diarrhoea, increased school attendance.

Figure 1 also represents a chain of events through time, given that these different types of results would usually take place sequentially, although not always. The causal links between these different types of results would need to be informed by evidence, as a sustained actual outcome (in terms of people actually using WASH services) or an impact in the programme area could be influenced by many other factors outside of the programme.

Figure 1 is based on a diagram that appeared in DFID's WASH portfolio review (2012), with some adjustments made by our team to allow reflecting the reality of WASH programming on the ground. We have introduced a number of key changes to the results chain initially presented in the DFID WASH portfolio review. For example, when considering performance indicators, both in DFID's guidance and elsewhere, the 'three Es' of economy, efficiency and effectiveness, with associated cost-efficiency and cost-effectiveness indicators usually receive most attention. However, it is essential to also consider equity and sustainability in order to complete the analysis: these can be considered at the actual outcome level, given that this is where actual data on results at the level of the beneficiary population would be collected.

We therefore recommend that **seven key dimensions** be considered in the VFM analysis of WASH programmes, as presented in Table 1 below.

Table 1. Seven dimensions for evaluating VFM of WASH programmes

	Description	Examples of indicators
Economy	Economy relates to the price at which inputs are purchased (consultants, supply of goods, transport, training etc.). Evaluating economy consists of evaluating whether the manager is buying inputs of the appropriate quality at the right price. Economy in procurement is important in WASH programmes where transport and goods can represent a high proportion of costs.	Unit costs for key supplies Staff costs for different staff categories
Efficiency	Efficiency relates to how well inputs are converted into a specific output, such as the construction of a water point, conducting a CLTS campaign etc. The implementer exercises strong control over the quality and quantity of outputs that are produced.	% original targeted outputs achieved for budgeted amount % communities that have become ODF following triggering Number of people living in communities that have become ODF following triggering
Effectiveness	Effectiveness relates to how well outputs from an intervention are converted into sustained actual outcomes. In contrast to outputs, the implementer does not exercise direct control over whether actual outcomes materialise and whether they can be sustained.	% of assumed outcomes translated into actual outcomes (i.e. assumed beneficiaries versus actual new users) % new users still using sustained service level after 3 years
Cost-efficiency	Cost-efficiency compares the costs of a WASH programme and the number of outputs and/or assumed outcomes reached. Cost efficiency would be expressed as a unit cost ratio per unit of output (or assumed outcome) generated.	Cost per output (cost per borehole, cost per CLTS triggering etc.) Cost per assumed beneficiary (i.e. assumed outcome) Leverage ratio of other sources of financing

	Description	Examples of indicators
Cost-effectiveness	Cost-effectiveness is the cost of achieving intended programme actual outcomes (or impacts). This can be used to compare the costs of alternative ways of producing the same or similar benefits.	Cost per actual beneficiary using sustainable WASH services (i.e. sustained actual outcome)
Equity	Equity means making sure that results of WASH programmes are targeted at the poorest and most disadvantage groups, distributed fairly and reaching the intended beneficiaries. Equity can be defined in many potential ways, related to the different sources of inequity (income, gender, regional disparities or social groups (e.g. castes)).	% of access to WASH by specific groups (defined either in terms of poverty quintiles or disadvantaged group) Efficiency and effectiveness indicators by poverty quintiles Cost-efficiency and cost-effectiveness indicators by poverty quintiles
Sustainability	Sustainability is whether or not WASH services and good hygiene practices continue to work and deliver benefits over time after the end of the programme.	% original new users still using sustained service level after 3 years % of borehole stills functioning at intended improved service level after 3 years

The main adjustments to the WASH results chain that appeared in the DFID's WASH portfolio review (2012) are as follows:

- **Distinguishing between assumed and actual outcomes** – there is a difference between assumed outcomes and sustained actual outcomes. Many organisations make assumptions about outcomes based on outputs data. For example, they would assume that a new borehole installed by the programme would serve 250 people. In practice, that might not always be true: there might be less (or more) people served by the new borehole. People who gain access through the new borehole would have had some form of access beforehand, which could have been either improved or unimproved. The new borehole might fail over time and cease to provide improved services. The distinction between assumed and actual outcomes has therefore been introduced in order to reflect those factors. As mentioned above, however, actual outcomes can only be measured if robust M&E systems are in place with ongoing data collection. In particular, it would be necessary to measure the number of new users who gained access to improved services that they did not have before. Most programmes will not be able to capture this difference: one way to overcome a lack of data is to express the uncertainty around actual outcomes by using ranges of estimates for the number of beneficiaries reached.

- **Measuring sustainability and equity at actual outcome level** – the original diagram had sustainability and equity considerations running through the chain. It appears more appropriate to measure these indicators at outcome level. Actual outcomes can be measured at different points in time (i.e. 3/6/12 months after an intervention) to capture sustainability, which is why such outcomes are referred to here as "sustained actual outcomes". This allows monitoring the number of people who had initially gained improved access to WASH and were using the service, but later might have stopped receiving services, for a variety of reasons. However, few organisations are effective at

collecting sustainability indicators, which means that in practice, estimating the sustainability of outcomes remains difficult.

A.2. Putting VFM into context: benchmarking and qualitative analysis

It might take a few days of crunching data to arrive at a figure such as "£14 per beneficiary" as an indicator of cost-efficiency. But how do we know whether such an indicator reflects "good" or "inadequate" VFM? Such indicators mean relatively little on their own and out of context. Therefore, it is essential to benchmark results based on a similar analysis of other comparable programmes and to complement the computation of VFM indicators by qualitative analysis.

Benchmarks can be:

1. **Internal** – considering variation within the programme and reasons for it:
    - across years, if there was a change of design during the programme;
    - across geographical areas, where the programme was implemented differently;
    - between units of implementation (between districts / schools);
    - against stakeholder expectations (planned/ achieved).
2. **External** – considering other programmes:
    - in the same country, but with a different implementation model;
    - in other countries, with the same implementation model (e.g. comparing UNICEF school WASH programmes across several countries).

Of these possible benchmarks, external benchmarks within the same country are probably the most relevant, as there is a stronger chance of placing findings into context.[2] To really understand if a programme is performing well, it is essential to compare it to other similar programmes. For example, CLTS programmes run by the same NGO across three countries might have different economy indicators (in terms of input costs), but at the efficiency stage the performance of this NGO programmes might be quite comparable, i.e. they could have similar records of converting staff time and resources into successful triggering.

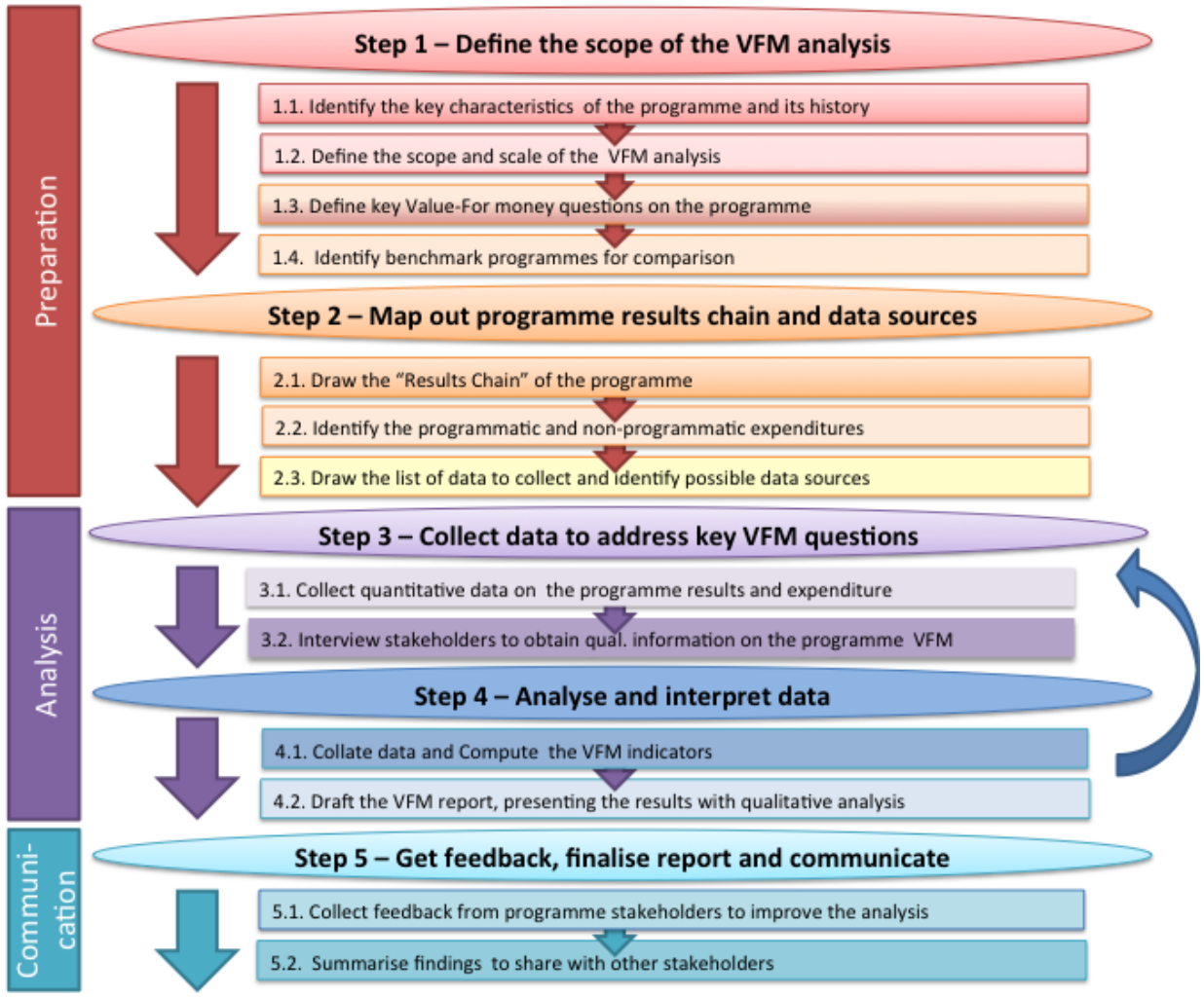
As well as benchmarks, qualitative analysis of VFM indicators is needed to be able to interpret such indicators. To understand one programme appears to be more cost-effective than another, it is essential to conduct at least a partial evaluation of the programme, including reading background reports and evaluations and, crucially, interview key stakeholders. For this reason, it would be difficult to conduct the VFM analysis of a given programme as a stand-alone exercise: it would be much preferable to build a VFM analysis into the more comprehensive evaluation of such a programme.

[2] Both internal and external benchmarks are important, but which ones are more useful depends on the evaluator's standpoint. An internal programme manager might be more interested in VFM questions around making sub-contracting more efficient and therefore using internal benchmarks across years. An external reviewer (e.g. a consultant or a NGO head office staff member) may be more interested in external benchmarks.

Part B – Conducting a VFM analysis in practice

This section provides practical guidance for carrying out the VFM analysis of any WASH programme (with particular emphasis on rural programmes). The process of carrying out this analysis has been broken down into five main steps, although all these steps may not necessarily be relevant, depending on the context of the analysis (and particularly depending on whether the VFM analysis is a stand-alone exercise or part of a broader evaluation). The five steps are presented in Figure 2 below.

Figure 2. A stepped-approach to conducting VFM analysis



Source: authors

Below, we present in more detail the activities that need to be carried out under each of these steps. The text in boxes at the start of each section summarises key points. In addition, worked examples are provided in Annex B to clarify the type of analysis conducted.

Step 1 – Define the scope of the VFM analysis

- Identify the key characteristics of the programme (type of programme, funding years, context, activities, geographical scale, implementation agencies…) and build a narrative of the programme.

- Collate existing reports about the programme (e.g. business case, programme design document, initial budget, quarterly and annual reports, final report, financial report)
- Identify programme stakeholders, key people who will know about the different dimensions of performance (e.g. programme manager, finance officer, M&E officer)
- Define the scope and scale of the VFM analysis (geographical boundaries and years of analysis)
- Define key VFM questions and consider whether the data identified above would be sufficient to answer them.
- Identify and select programme benchmarks comparators so as to be able to compare results and draw stronger conclusions based on the results of the analysis and start contacting them to assess their interest to take part in the FM study.

After initial consultation with programme implementers, the first step consists of obtaining key data on the programme, its objectives, main components and activities. To that end, secondary data should be collected from project documentation (business case, programme design document, final report, annual reports).

As the value of the analysis lies in the ability to compare results with those of other programmes, it is essential to describe the programme by using standard terms. Activities can be characterised based on a standard list of "Programme activities", as set out in Table 2 below. The "Programme Description Fiche" in Annex C1 provides a list of key information to be obtained on the Programme characteristics (Dates, Status, Budget, Sector of intervention, Geographical scale, type of programme, Purpose of the intervention, activities, implementers, Financiers etc.).

Table 2. List of standard programme activities

Water	Sanitation	Hygiene	Cross Cutting support activities
• Construction of piped water supply systems • Construction of wells, boreholes etc. • Water supply in schools and health centres • Household Water Treatment and Safe Storage • Access to finance	• CLTS • School sanitation • Construction of household latrines • Sanitation marketing • Faecal sludge management • Access to finance	• Hygiene Promotion in the field • Mass media campaign • ….	• Planning of WASH services at national level • Planning of WASH services at sub national or city level • Institutional development • Policy support • Implementation of M&E framework • HR training and capacity building

Based on an initial conversation with the implementation team, a "narrative" of the programme can be constructed, so as to understand key evolutions and adjustments during the programme's period of operation. Key actors involved in the delivery of the programme (including executing agencies, sub-contractors, communities, households, central and local government, municipalities and donors etc.) should be identified, as well as the different financing sources for the programme.

During this step, **the team should also collect some background data to better understand the overall context for the programme**:

- At national level: obtain data on population figures, poverty levels and access to water and sanitation services, with disaggregated data between urban and rural (or any other relevant regional split);
- At programme level: data related to the programme area (population, poverty levels and access to WASH services indicators).

The team should identify key interlocutors to interview, who will know about the different dimensions of the programme (e.g. programme manager, finance officer, M&E officer) at different levels of interventions.

The team should then exchange with programme implementers to define:

- The **scope and scale of the VFM analysis (years, geography and activities)**: The analysis can cover the entire scope and scale of the programme. However, programme implementers may be interested to answer specific questions relative, for example to evaluate
  - The performance of the programme over time, especially if there have been significant changes in approaches over time;
  - The performance of the programme across regions, especially if implementation approaches have varied from one region to another.
  - The VFM of specific activities to inform programme design (for example, CLTS campaigns vs. School WASH programmes);

- **Key questions they are interested in with regards to VFM.** Any specific VFM question that the programme managers would like to see addressed in the analysis will need to be raised and discussed at the start of the analysis. For instance, a manager may be interested in knowing whether the change in implementation arrangements or the introduction of a new method had an impact on the programme's outcome.

These questions will determine the level of detail at which information needs to be collected and the analysis be carried out (for example, whether it is important to collect disaggregated data for different regions or not). The ability to address these questions will however depend on the type of information that is available and the level of granularity for this information.

To assess the VFM of WASH interventions, programme benchmarks should be identified so as to be able to compare results and draw stronger conclusions based on the results of the analysis. This will enable to say if VFM has been comparatively "good" (i.e. better or worse than another programme). To carry out such benchmarking, it is essential to have sufficient variability across programme characteristics (in terms of programme design, approach, context etc.) so as to assess the impact of such variations in terms of VFM indicators. Potential variations can be: in terms of the activities set up (school sanitation vs. CLTS), in the modality of implementation (through a multilateral or many NGOs) or in terms of the scale of the programme (national vs. regional level).

Step 2 – Map out the programme results chain, the data to collect and data sources

- Draw the "Results Chain" of the programme: Map out its inputs, outputs, assumed outcomes, actual outcomes etc. in a diagram

- Identify the non-programme expenditures that contribute to achieving results.

- Draw the list of data to collect (financial and results data) and identify possible data sources for each element of the chain and collect those that are available remotely.

The team should then draw the "Results chain" of the programme using the canvas presented above in Section A.1. It will be necessary to define indicators for the inputs, processes, outputs and assumed and actual outcomes of the programme, by main sub-sectors (water, sanitation, hygiene, cross-cutting). The aim is to visualise how the programme generates results. This can be done using the programme's logframe, although the wording of the programme's indicators will likely need to be slightly changed so as to fit the Results Chain (differentiating between outputs and outcomes for instance).

From the indicators of the Results Chain, the team in charge of carrying out the VFM analysis should then draw a list of data to collect on input costs, number of outputs, assumed and sustained actual outcomes.

Expenditure data should be collected for all resources (financial and non-financial) spent by different actors inside and outside of the programme, when such resources have contributed to ensure that outputs and actual outcomes are achieved in a sustainable manner. To facilitate data analysis, costs can be categorised by types of inputs: hardware, direct software support and Indirect programme support costs.

Table 3. Cost typology used

Type of costs	Definitions
Direct hardware	Initial capital costs of putting new services in place, and associated construction related services. This includes "hardware investments" such as drilling, installing pumps and pipe systems, building latrines etc… This includes the costs of the equipment and the labour costs and one-off associated "software" costs for detailed design studies and construction supervision.
Direct software support	Direct support activities associated with community mobilisation related to the outputs: • CLTS campaigns; mobilisation, hygiene promotion • Support and training to service providers
Indirect programme support	Cost of planning and implementing the activities of the programme. This includes the salaries of experts and programme support, as well as consultancies contracts, ME studies and audits, trainings of technicians and goods (IT, equipment, etc.).

Source: Authors.

Depending on the VFM analysis pursued, data can be collected either:

- only for the initial programme costs, from all financing sources (for example, to estimate the cost-efficiency of the programme); or
- for the lifecycle costs of the investments that contribute to ensure that outputs and actual outcomes are sustained (for example, to estimate cost-effectiveness of the investment). This will include programme and non-programme costs.

Estimating programme costs can be done based on programme expenditure reports, which will most often need to be re-treated in order to allocate those costs to the different activities under review. This is a key component of the VFM analysis, particularly in the case of

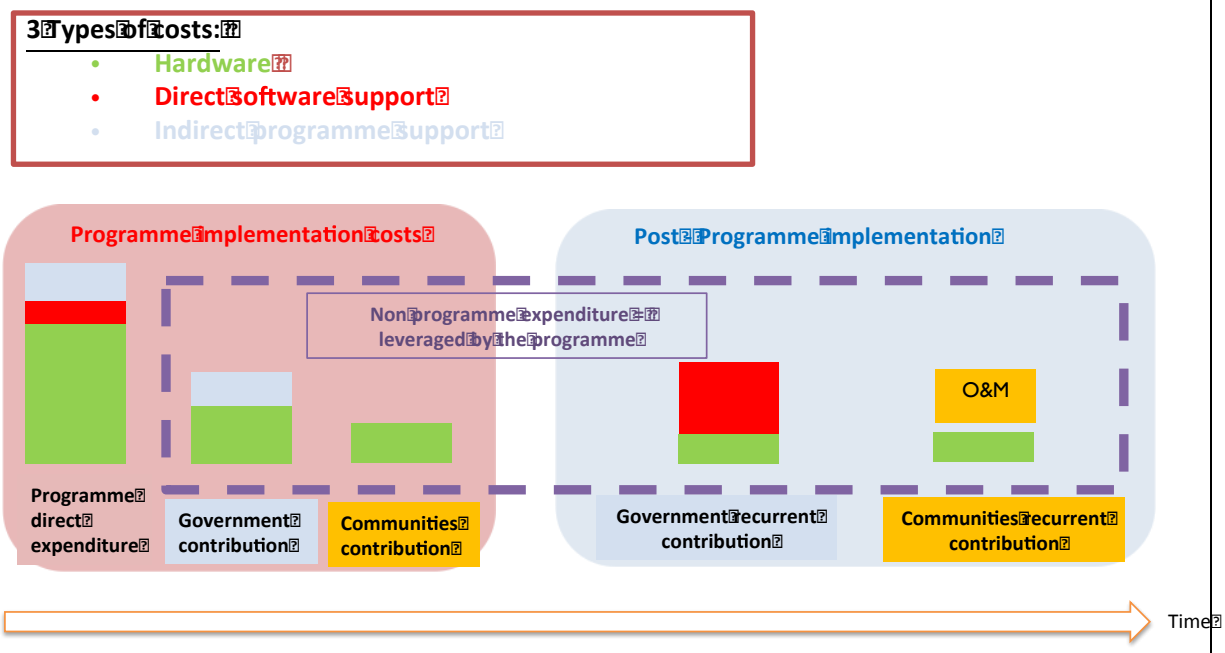
government programmes that do not tend to record costs in a way that can easily allow linking input costs to results. If such tracking systems are not in place, it therefore becomes essential to re-construct the linkages between resources and outputs based on allocation keys.

Estimating non-programme costs calls for looking at all sources of finance that contribute to programme implementation over time, i.e. not only costs from the programme, but also to include beneficiaries and government contributions after the end of the programme.
Details on the costs involved are provided in Box 1 below. To the extent possible, all of these flows should be captured in the VFM analysis.

Box 1. Capturing external sources of finance over the lifecycle of the investment

To capture external sources of finance, the team can draw a flow chart showing the programme's funding in the context of other sources of funding, distinguishing between the funding flows that come directly from the programme's budget, those that are indirectly related to the programme outputs, and those that are not related to the programme's outputs, but that may impact sustained actual outcomes from the WASH programme. For instance, funding channelled by the programme to a multilateral agency and then to a community to support CLTS triggering would be treated as a direct financing flow. The payment made by a household to a mason for constructing a latrine would be an indirect financing flow if that occurred as a result of a CLTS campaign undertaken with programme support. Finally government funding allocated to an NGO building latrines in the same area as the programme, but outside of the programme activities is also an indirect financing flow.

This has been schematically represented in the Figure below.



When looking beyond programme implementation for sustainability, one needs to take into account several types of costs, including the operating and maintenance expenditure (commonly referred to as O&M) and the capital maintenance that will be required for large repairs in order to keep the service going (occasionally, new investments in the form of capex might also be required). The WASHCost project, with funding from the Bill and Melinda Gates Foundation and implemented by IRC, had defined a cost typology to refer to such costs which is now widely used in the sector, as follows:

- Capex: Initial costs of putting new services into place, including "hardware" such as pipes, toilets and pumps and one-off "software" costs such as associated training and consultations.
- Operating and maintenance expenditure: Routine maintenance and operation costs to keep services running (e.g. wages, fuel or any other regular purchases). Operating expenditures is the recurrent (regular, ongoing) spending to provide WASH goods and services: labour, fuel, chemicals, materials, and purchases of any bulk water. Maintenance expenditure is the routine expenditure needed to keep systems running at design performance, but does not include major repairs or renewals that are recognised as not recurrent.
- CapManEx: Occasional large maintenance costs for the renewal, replacement and rehabilitation of a system that goes beyond routine maintenance to repair and replace equipment, in order to keep systems running. These essential expenditures are required before failure occurs to maintain service levels and need to be planned for.

Source: Authors

In order to ensure sustainability, the costs highlighted in Box 1 above need to be funded. For the purpose of the VFM analysis, it is therefore essential to go back to the funding sources and identify: a) whether or not they are covering those costs (this would also largely depend on the country's policy as to which party is expected to cover such costs) and b) how much has been allocated to cover those costs. A VFM analysis would need to be based on the actual value for such costs rather than on the expected value. If not sufficient funding is being provided, this would generally lead to a deterioration in the sustained outcome indicators and therefore lower cost-effectiveness.

Table 4 below presents how such long-term costs would typically be covered by different funding sources in a standard WASH rural programme. However, such a table would need to be built and tailored to the circumstances of each country in which the VFM analysis is being conducted.

Table 4. External sources of finance and life cycle costs

Financing sources	Types of expenditure	Data sources
Central Government expenditure	Direct and indirect support costs: Support to the local institutions implementing the programme, national policy development, capacity building, national education campaigns etc.	WASH ministry budget and financial statements Public expenditure reviews
Local government expenditure	Capex, Opex and CapManEx for assets and services set up by the programme Direct and indirect support costs: Support to communities implementing the programme, enforcement of rules etc.	Local government budget and financial statements
Other donors	Same as programme's costs	Donors' programmes budget and annual reviews
Household/community expenditure	Capex, Opex and CapManEx for assets and services set up by the programme (latrine usage, Support to CLTS triggering)	Household surveys
Private sector expenditure	Capex, Opex and CapManEx for assets and services set up by the programme	Private sector companies surveys (local WASH service providers etc.)

In practice, collecting data on costs funded by other parties than the programme itself might be complicated because such costs are inadequately recorded. It would therefore be essential to clearly state which costs have been collected and which categories of expenditure have simply been estimated when actual data is lacking. This is essential in order to allow comparability of the figures.

Financial data should be collected over time, based on the appropriate time variations as identified in Step 1 (this can be after or before a change, on a yearly, bi-yearly basis etc.). When actual expenditure data is not available (for instance for household expenditure, or for municipalities expenditure), the team will have to rely on average cost estimates per unit of output (for capital expenditure, capital maintenance expenditure and operating costs and cost of capital where relevant) and total programme costs (for software costs).

Data on outputs, assumed outcomes and sustained actual outcomes will need to be collected from programme documents. Some challenges are likely to arise when estimating the number of beneficiaries, as presented in Box 2 below. It is important to clarify in the report how the number of beneficiaries has been calculated.

Box 2. Collecting data on outputs and sustained actual outcomes

One of the challenges of estimating the number of beneficiaries that have gained a sustainable access to a service lies in determining the number of people who can be considered to fall within the service area of the programme and who are actually receiving service following investments from the programme. People are likely to source their water from multiple formal and informal sources at different times of the day and for different purposes.

Two types of information on the number of persons with access can be collected:

- The number of users per service delivery model (one infrastructure). Data can be collected on expenditure made on the water supply infrastructure of the service delivery model and the number of 'users' it provides – "users" defined as those who regularly use this source for (mainly) drinking purposes;
- The number of persons living in an area. Data can be collected on access to water services in a defined service delivery area (this might include more than one service delivery model), even if some do not have access to the water supply system in question.

For each of the data items defined above, the team should then identify possible data sources and collect those that are available remotely. Table C 2 in the Annex C - Tool Box can be used as a reference for possible data sources.

Finally, the team should collate more detailed reports about the programme, consider the VFM questions formulated and assess whether more detailed data sources are necessary.

Step 3 – Collect data to answer key VFM questions

- Engage with key stakeholders, including comparators, to:
  - Explain the objectives and methodology of the VFM study
  - Discuss the VFM questions and their relevance
  - Discussion available data sources to answer them
  - Identify where the data can be collected from
  - Discuss ways to overcome missing data or other interlocutors to be interviewed
  - Collect qualitative information to answer the VFM questions – this will include getting an in-depth understanding of the programme's objectives, activities, implementation modalities, financing arrangements etc.

- Collect data from stakeholders. Most data will not be at the programme implementer's fingertips and it will be necessary to go through M&E and Financial Monitoring Systems or to extract data from actual contracts in order to collect the necessary information.

The team should meet with stakeholders, conduct field interviews and collect the remaining data. Main types of interlocutors are identified in Table C 2 in Annex C.

Most data will not be available immediately. Getting it will sometimes require going through Information Systems with programme implementers. Some programme stakeholders may be unwilling to share data without a good explanation of the objective of the study.

The key questions raised with stakeholders should seek to provide qualitative answers to facilitate the interpretation of VFM indicators. Different aspects will be stressed depending on the exact purpose of the VFM analysis. Table xx below provides a list of key questions to be addressed for each of these key indicators, which can provide a guide for interaction with stakeholders for this analysis.

Table 5 - Key qualitative questions for stakeholder interaction on VFM

VFM indicator	Key questions for stakeholders
Economy	• What are the unit costs paid for key inputs (e.g. monthly cost for a staff member/consultant, DSA, daily vehicle hire rate, petrol price per litre, cost of one hand pump, of a latrine slab, cost of training one CLTS facilitator, etc.)? • Do the programme implementer think they have bought inputs at the appropriate quality and at the right price? • How do current unit costs compare to unit costs originally budgeted for? Or to the costs incurred by other organisations implementing similar programmes in the country? • Could the efficiency of procurement processes have affected unit costs: are unit prices negotiated or the result of a procurement process? What procurement challenges have the implementers experienced?
Efficiency	• How well have the inputs and activities been converted into outputs? • Have the planned number of outputs been achieved, and if not, why not? Was this due to implementation challenges or to other factors, independent of the suppliers' ability to deliver?
Cost-efficiency	• Have programme implementers sought to estimate the unit costs of providing different types of outputs? • How much did it cost the programme and how much did it cost in total (i.e. including other parties' expenditure)? Was the programme able to leverage resources from other parties and if so, to which extent?
Effectiveness	• Do the programme collects data on sustained outcomes and therefore seeks to estimate its own effectiveness indicators? • How effective has the programme been at converting access to WASH service (at the end of the programme) into sustained actual outcomes (e.g. use of services over time), at least in the short and medium term? • Are the services set up by the programmes sustainable over time?
Cost-effectiveness	• At what cost per beneficiary have the sustained actual outcomes been delivered? • What were the costs to the programme and the overall costs to all parties that have incurred an expenditure of delivering these sustained actual outcomes? • Was the programme able to leverage resources from other parties and if so, in which proportions?

The main challenge of the VFM analysis will likely be to collect expenditure data in a way that allows linking such expenditure data to the activities performed, or to specific outputs. Box 3

below presents different strategies for collecting cost data related to specific activities implemented by the programme.

Box 3. Alternative strategies for collecting cost data related to specific activities

In the best-case scenario, the programme will have an activity-based financial reporting system, i.e. a system that tracks costs allocated to activities undertaken by the programme. Activity-based cost management has been around in the private sector for more than fifteen years in order to improve management performance and is being increasingly applied in the so-called "social sectors".

Several large international organisations or NGOs have adopted this type of cost management systems, but by far not the majority have done so in the WASH sector. In particular, WASH programmes implemented by Governments usually do not use such kinds of systems. In such programmes, expenditure is reported according to existing accounting standards and cost classifications. For example, most governments' accounting standards would keep track of inputs by type of inputs (personal, material etc.) but not seek to allocate such inputs to specific activities. As a result, the information that can be extracted from governments' accounting systems would need to be systematically re-treated in order to allocate costs to activities.

If costs are not already allocated by activities in the programme's budget, two solutions can be envisaged:

- For smaller programmes, data can be collected on unit costs and bills of quantities to allocate the overall programme budget to the different components of the programmes (water, sanitation, hygiene, cross cutting support activities) and outputs.
- It can be useful to work with the procurement department to obtain more detail on what funds have been spent on, based on the actual contracts for works undertaken (such as drilling contracts or the contracts with the local NGOs in charge of conducting CLTS campaigns). This will require finding out, for each type of output, which contracts have been procured, by whom and with what type of contracting party. Contract records will enable allocating the expenditure to type of contracts, which can be categorised by type of costs and outputs

However, if this analysis has not already been done by programme managers.

Step 4 – Analyse and interpret data

- Allocate financial expenditure to outputs, assumed outcomes and actual outcomes and carry out the necessary calculations to derive the key VFM indicators

- Draft the report, presenting the programme context and activities, the VFM quantitative indicators, qualitative assessment on the programme VFM and the key drivers of VFM. The structure of the draft reports of the DFID VFM WASH operational research can be used as a reference.

The team should then gather all the data into an excel spreadsheet. It is likely to be easier to develop a purpose-built excel model for each programme that would for each analysis, as

the structure of the spreadsheets will depend on the data sources used. Data can be arranged with one sheet for inputs, outputs, outcomes data etc.

The expenditure data will then need to be linked to outputs, assumed and sustained actual outcomes. This will require allocating indirect costs as well onto programme components, as presented in Box 4 below. In addition, Annex B contains a worked example of a hypothetical programme, to show the use of different calculations and assumptions.

Box 4. Allocating data to activities

Indirect costs are the costs that cannot be directly attributed to one activity. There are incurred by the programme management and by the support provided by the head office, and are for instance linked to the overall management of the programme, such as running the country office. Some programme will include them in their budgets and others won't. For instance UNICEF budgets always include head office mark-up, but DFID's programme budgets do not include a mark-up for their own management costs. Thus the team should identify clearly which indirect costs are included or not.

The team will need to estimate the percentage of indirect costs that can be allocated to each of the outputs, so as to calculate a total cost per output. The allocation of indirect costs will be based on an estimated allocation key which will vary with the level of programme managed involved to carry out each activity. This information will necessarily be subjective and will be estimated through interviews with the programme implementers.

If the activity based costing is already used to allocate costs in the programme budget, then the team will only need to enquire about the method used and ensure that the activities to which costs have been allocated are in line or can be reconciled with the definition of outputs.

Expenditure related to programme support activities (such as policy support programme, planning of WASH activities, capacity building and training etc.) can be allocated to an output if they directly contribute to achieve it. Otherwise they can be allocated to the "cross cutting support activities" and will be linked to their own outputs and sustained actual outcomes. Sustained actual outcomes of cross cutting activities contribute to building an enabling environment. For instance, the training of CLTS facilitators or the planning of a CLTS campaign are activities that are directly linked to the CLTS activity and will contribute to the "access to sanitation" sustained actual outcome. Developing a national policy for sanitation or training local government staff on the other hand is considered as "cross cutting support activities". Spending on these activities do not contribute directly to increase access to sanitation (i.e. there is no immediate causality between the two), but they do contribute indirectly as they build the enabling environment that permits access to sanitation and therefore they need to be taken into consideration in the framework.

The next step is to carry out the necessary calculations to derive the key VFM indicators presented in Section A.1. above.

Finally the team should draft the report, interpret the findings and seek to put them back into their context. Links to examples of VFM studies and outlines can be found on the VFM-WASH website. The report should introduce the context of the programme, its objectives and the key activities undertaken. It should then map out the components of the results chain and the VFM results in terms of economy, efficiency and cost efficiency, effectiveness and cost-effectiveness.

These results can be compared with internal trends and external benchmarks identified in Step 2. Apart from presenting quantitative results, it is important to analyse the cost-drivers and assess the reasons of variation in VFM indicators, looking at internal programme-related factors and external factors and drivers, so as to be in position to assess whether the programme delivers good or bad VFM and why. VFM analysis is not in itself a full evaluation of how the programme is functioning on the ground and how such functioning could be improved. But it needs to assess current issues that increase VFM and how these could be addressed. As such, a VFM analysis would ideally take place as part of or in parallel with a more thorough evaluation process that would enable identifying VFM drivers more precisely.

A strong emphasis on the qualitative elements of the VFM analysis strengthens the findings of the analysis by looking at cost drivers rather than simply at VFM indicators, by seeking to attribute changes in VFM to specific factors (for example, an increase in unit costs over time could be due to inflation rather than to reduced programme cost-efficiency over time).

This analysis will be based on the qualitative interviews conducted in step 3. It will seek to explain the variations of VFM indicators across years and regions based on internal changes in the programme design, implementation arrangements or approach and external changes (in price of inputs, climatic or political factors that might have had an impact on the programme efficiency). VFM indicators can also be compared across benchmark programmes, but making sure differences between programmes are made explicit. If the benchmark programme has a lower unit cost per output, it does not mean that it is more cost efficient than the studied programme. This difference could be explained by a variety of factors: difference in regions of implementation can result in lower input costs (proximity to main cities, higher water tables, easier implementing conditions etc.). A national government programme is likely to have more indirect programme support costs for instance as it will be contributing to the national framework etc. All these explanations need to be made very explicitly when comparing VFM indicators across programmes.

Box 5 below provides a more concrete example of how results from a VFM analysis can be presented and interpreted are presented. They show that indicators need to be put back into the context of the programme and interpreted with qualitative analysis and benchmarks.

Box 5. Example of VFM analysis from the VFM WASH project (Mozambique)

For the PRONASAR programme in Mozambique, we found that the cost per public water point (borehole) built was £13,322. This cost included hardware, software and indirect programme support.

The hardware cost only was £12,317. This cost may seem very high in comparison to the other countries. However, UNICEF estimated their own unit cost for the same output to be of £8,625, and the WASHCost study revealed that the average cost per water point at national level was £9,723 (2012 estimates)[3]. This is due to the high costs in Mozambique in general, which can be explained by the high inflation (23% on average over the period of study), the transport cost to the capital city, the market structure, the lack of private competition etc. Yet, the PRONASAR costs are still higher than UNICEF's and the national average. This can be explained by internal programme factor. First, the procurement and financial management in PRONASAR is weak: Procurement procedures have loopholes and fiduciary risks are important due to weak internal control systems. Moreover, decentralised levels and

[3] *Source: 2012 Relatorio Balanco ; UNICEF (2013), "Learning from Innovation: One Million Initiative in Mozambique -Contract Management Case Study"; WASH Cost (2011a) Cost of PEC-Zonal Activities in Mozambique - Analysis of contract costs from 2008 up to 2011; WASHCost (2011b), Costs of rural water point sources in Mozambique Unit Costs Analysis of Contracts January up to June 2011.* Data from 2011 was corrected with inflation for 2012

contractors are not incentivised to out-perform. For instance, boreholes contractors are not responsible for poor siting and dry boreholes.

Direct software support costs to water committees represent only a small proportion of the total cost of providing access to water. This might have an impact on the sustainability of water points and drive down cost effectiveness.

A number of considerations need to be borne in mind when seeking to carry out comparisons as a basis for deepening the analysis of VFM indicators:
Interpreting changes in VFM across time: If trying to estimate a change in VFM across time for the same programme, it is crucial to get additional information to understand the programme's spending cycle. In practice, existing records of costs and results tend not to be sufficiently precise and distortions can be introduced if the outputs do not materialise in the same year as when spending on those outputs was incurred. This can be because an output takes more than a year to be implemented (small water supply system) or because it is realized at the end of a year and fully paid for in the next one. In addition, external factors that vary from one year to another (such as inflation or exchange rates) can have a serious impact on unit costs.

Several solutions can be envisaged to address these issues. A better understanding of spending cycles can help in making adjustments so as to better align the timing of outputs and of spending flows. Accounting systems have the notion of "work in progress" (i.e. for an output that is in the process of being built but has not yet been commissioned): it is equivalent to the amount of work that has already been put into building the output and would be accounted for as an asset. However, the VFM analysis would extract data not from the balance sheet but from expenditure records, which means that such amounts would not be recorded. It is therefore recommended to either make assumptions to ensure that all the costs that relate to a specific output are recorded in the year in which the output is commissioned. Indeed, what is important for the VFM analysis is the total cost of this output, rather than the timing in the realisation of such a cost. Alternatively, if intra-year cost variations are not a big focus for the analysis, it is preferable to estimate averages across several years so as to eliminate to the extent possible such timing effects.

Interpreting VFM data from comparators in different countries: dealing with the exchange rate impact. Ideally, comparators should be identified in the country of the programme: this would allow minimising the risk of operating in different contexts (although regional contexts are sometimes as crucially important, if not more). But in some cases, this cannot be done and there would also be value in comparing similar programmes in different countries. In the latter case, however, it would be essential to be mindful of potential exchange rate impacts on the results. Intra-year comparisons for a programme, when carried out, should also be "neutralised" for exchange rate variations, preferably by using PPP exchange rates (i.e. exchange rates that control for variations in Purchasing Power Parity) alongside nominal exchange rates. It would also be preferable to carry out the analysis of intra-year variations in local currency (both in nominal and real terms, so as to neutralise the impact of inflation on cost variations).

Step 5 – Get feedback, finalise report and communicate

- Collect feedback from programme stakeholders to improve the analysis and fill in data and analysis gaps
- Share the findings with other stakeholders inside and outside the programme.

It is important to get feedback from programme stakeholders to improve the analysis and fill data gaps from Step 4. It is likely that more information will become available when people see the results and how it contributes to better managing the programme. Triangulating the data will also improve the reliability of the results.

The team can organise a workshop to share and discuss the findings with other stakeholders inside and outside the programme. The study can benefit to all, as programmes in one country are likely to share similar challenges. As a result, the more data on comparable programmes (referred to as "comparators") is gathered, the better. This would also contribute to making more institutions familiar with the VFM analysis and the methodology and will encourage others to apply it to their programmes. Overtime, this will increase the number of potential benchmarks if the data is shared.

The team should present results and use those as a basis for formulating two main types of recommendations:

- on how internal systems should be improved and potentially modified in order to allow for VFM analysis to be performed in a more routine manner going forward;

- On how programme design and implementation modalities can be modified in order to improve the programme's performance against VFM indicators.

The report should then be finalised and disseminated.

Annex A Glossary

Term	Definition
Assumed actual outcome	The *assumed* outcomes resulting from the outputs, e.g. the number of people assumed to be served by a new water point, based on existing standards and assumptions at country level.
Capital expenditure (CapEx), including hardware and software	Initial costs of putting new services into place, including "hardware" such as pipes, toilets and pumps and one-off "software" costs such as associated training and consultations.
Capital maintenance expenditure (CapManEx)	Occasional large maintenance costs for the renewal, replacement and rehabilitation of a system that goes beyond routine maintenance to repair and replace equipment, in order to keep systems running. These essential expenditures are required before failure occurs to maintain service levels and need to be planned for.
Cost-effectiveness	Cost-effectiveness is the cost of achieving intended programme actual outcomes (or impacts). This can be used to compare the costs of alternative ways of producing the same or similar benefits.
Cost-efficiency	Cost-efficiency compares the costs of a WASH programme and the number of outputs and/or assumed outcomes reached. Cost efficiency would be expressed as a unit cost ratio per unit of output (or assumed outcome) generated.
Direct software support	Direct support activities associated with community mobilisation related to the outputs: • CLTS campaigns; mobilisation, hygiene promotion • Support and training to service providers
Economy	This relates to the price at which inputs are purchased (consultants, supply of goods, transport, training etc.).
Effectiveness	Effectiveness relates to how well outputs from an intervention are converted into sustained actual outcomes. In contrast to outputs, the implementer does not exercise direct control over whether actual outcomes materialise and whether they can be sustained.
Efficiency	Efficiency relates to how well inputs are converted into a specific output, such as the construction of a water point, conducting a CLTS campaign etc. The implementer exercises strong control over the quality and quantity of outputs that are produced.
Equity	Equity means making sure that results of WASH programmes are targeted at the poorest and most disadvantage groups, distributed fairly and reaching the intended beneficiaries. Equity can be defined in many potential ways, related to the different sources of inequity (income, gender, regional disparities or social groups (e.g. castes)).
Impact	The longer-term result of the sustained actual outcome, often framed as health or education actual outcomes in WASH programmes, e.g. reduced diarrhoea, increased school attendance
Indirect programme support	Cost of planning and implementing the activities of the programme. This includes the salaries of experts and programme support, as well as consultancies contracts, ME studies and audits, trainings of technicians and goods (IT, equipment, etc.).
Inputs	Resource used, in terms of finance and staff time (capital and labour
Outputs	The direct deliverables of the project, attributable to the inputs
Operating and maintenance expenditure	Routine maintenance and operation costs to keep services running (e.g. wages, fuel or any other regular purchases). Operating expenditures is the recurrent (regular, ongoing) spending to provide WASH goods and services: labour, fuel, chemicals, materials, and purchases of any bulk water. Maintenance expenditure is the routine expenditure needed to keep systems running at design performance, but does not include major repairs or renewals that are recognised as not recurrent.

Term	Definition
Sustainability	Sustainability is whether or not WASH services and good hygiene practices continue to work and deliver benefits over time after the end of the programme.
Sustained actual outcome	The sustained actual outcomes, i.e. the change in poor people's lives, such as the number of new people moving from using an unimproved water point to an improved one. On the contrary to "assumed outcomes", sustained actual outcomes are measured based on actual survey data at different points in time (i.e. 6/12/36 months after an intervention) to capture its sustainability.

Annex B Worked example of VFM analysis

This Annex contains a worked example of a typical programme, to show how the method can be applied in practice. The figures presented in table below are illustrative only. This example intends to take the reader through the different steps of the analysis and to provide more concrete examples on what needs to be done.

There is an associated XLS file available here which demonstrates how the calculations work.

Step 1 – Define the scope of the VFM analysis

The illustrative programme used for this worked example is a water and sanitation programme in a rural area, implemented by an NGO. It has two main components: an access to water component, which entails of the construction of water points, and an access to sanitation component, which includes CLTS and hygiene promotion campaigns.

Step 2 – Map out programme results chain and data sources

The table below presents the hypothetical Results Chain for this programme.

Table 6. Overview of the programme's results' chain

Inputs		Outputs	Assumed outcomes	Sustained actual outcomes	Impacts
Water	Construction of water points Community mobilisation	New water points built Water committees set up	Population who gained access to water	Population has access to sustainable water supply at the intended level of service	Reduced health impacts (diarrhoea) More time available for productive activities
Sanitation	CLTS Hygiene promotion campaigns	Communities triggered	Population who gained access to sanitation: - ODF communities - New latrines built	Population use improved latrines Communities remain ODF	

Source: Authors. Illustrative example

Step 3 – Interview stakeholders and collect data

Under this step, the team should collect all the inputs data that will be used for the calculation of VFM indicators: data on outputs, assumed outcomes, sustained actual outcomes and impacts (when it exists) as well as expenditure data.

Output data. The data collected from the M&E report is presented in the table below.

Table 7. Output and outcome data

	Outputs		Assumed outcomes		Sustained actual outcomes	
	number	unit	number	unit	number	unit
Water	25	WPs constructed	6,250	People assumed to have access (number of new WPs * 250)	5,000	new users of improved water (new users minus previous users)

	Outputs		Assumed outcomes		Sustained actual outcomes	
	number	unit	number	unit	number	unit
Sanitation	25	Triggering completed	7,000	People assumed to be using a basic latrine (total population minus existing users)	3,000	new users of basic sanitation (new users minus previous users)

Source: Authors, illustrative example

Sustained actual outcome data. The second step is to gather key baseline and endline data available. This data, which needs to be gathered through household surveys, is crucial to estimate effectiveness and cost-effectiveness. Population data is also important for cost-efficiency. Data for this example is shown in the table below.

Table 8. Key baseline and endline data

Baseline data	Population of communities	10,000
	Average population per community	400
	Baseline survey - improved water coverage	20%
	Baseline survey - basic sanitation coverage	30%
	Existing improved water users	2,000
	Existing basic sanitation users	3,000
Endline data	Endline survey - improved water coverage	70%
	Endline survey - basic sanitation coverage	60%
	post-project – users of improved water supply	7,000
	post-project basic sanitation users	6,000
	increase in users of improved water supply	5,000
	increase in basic sanitation users	3,000

Source: Authors, illustrative example

Expenditure on inputs. The expenditure on activities and outputs (as identified above) needs to be collected. This can be retrieved from financial reports. If an activity-based costing system is not in place, the main effort could typically consist of allocating the reported expenditure lines against cost types, sectors and outputs. The meanings of the codes are presented in the table below.

For sake of simplification, expenditure has been allocated to outputs by sectors only in this example (water, sanitation, cross-cutting), as one sector only contains one type of outputs. If a sector has several outputs within a sector (for instance if we want to track the expenditure on boreholes separately from the expenditure on small water systems), than another layer of "output" codes would need to be added, so as to allow having a more detailed allocation of expenditure.

Table 9. Allocation keys to cost types and outputs

cost type codes	DH	direct hardware
	DS	direct software
	IPS	indirect programme support
Output codes (sectors)	W	water
	S	sanitation
	CC	cross-cutting

Source: Authors, illustrative example

In

At the end of the table, costs allocations are summarised by different sectors and outputs, and cost type, using the allocation codes.

Table 10 below, expenditure lines have been allocated to outputs (by sectors) and type of costs. The example below shows an ideal situation where expenditure is already reported by outputs and activities, rather than by type of inputs (staff, material, etc.). Most often, the expenditure report will need to be reworked and triangulated with other data sources to obtain such a disaggregation of expenditure.

For instance, the example shows that implicit estimations need to be made on how different staff members spent their time on different outputs of the project to allow allocating staff expenditure onto outputs.

At the end of the table, costs allocations are summarised by different sectors and outputs, and cost type, using the allocation codes.

Table 10. Expenditure data and allocation to outputs and cost types

Expenditure and coding of costs		**Expenditure**			**Cost allocation**					
		Actual unit cost	**Actual units**	**Total exp.**	**Cost type**	**Output 1**	% of spending to output 1	**Output 2**	% of spending to output 2	**Comment on the allocation of IPS**
Water										
	Drilling boreholes	£4,000	25	£100,000	DH	W	100%			
	Installation of handpumps	£850	25	£21,250	DH	W	100%			
	Training of WASH committees	£500	25	£12,500	DS	W	100%			
	SUB-TOTAL			£133,750						
Sanitation										
	Training of CLTS promoters	£10,000	1	£10,000	DS			S	100%	
	Construction of demonstration latrines	£75	50	£3,750	DH			S	100%	
	SUB-TOTAL			£13,750						
Staff										
	Head of WASH x 1 (15% of time)	£24,000	0.15	£3,600	IPS	W	70%	S	30%	Based on staff time spent by sector/output
	WASH Project Coordinator x 1 (100% of time)	£15,000	1	£15,000	IPS	W	70%	S	30%	Based on staff time spent by sector/output
	WASH Engineer x 1 (50% of time)	£19,000	0.5	£9,500	DH	W	100%			
	M&E Officer x 1 (20% of time)	£12,000	0.2	£2,400	IPS	W	70%	S	30%	Based on staff time spent by sector/output
	CLTS promoters x 10 (100% of time)	£5,000	6	£30,000	DS			S	100%	
	SUB-TOTAL			£60,500						
Other										
	Vehicle rent and maintenance	£2,000	5	£10,000	IPS	W	77%	S	23%	Based on the share spending per output on total spending
	Vehicle Fuel	£100	120	£12,000	IPS	W	77%	S	23%	Based on the share spending per output on total spending
	NGO partner overhead (7% of their contract)	£11,000	1	£11,000	IPS	W	77%	S	23%	Based on the share spending per output on total spending
	SUB-TOTAL			£33,000						
SUB-TOTALS										
	Direct Costs attributed to water outputs	DH		£130,750						
		DS		£12,500						
	Direct Costs attributed to sanitation outputs	DH		£3,750						
		DS		£40,000						

	Costs atttibuted to indirect programme support	IPS		£54,000						
	GRAND TOTAL			£241,000						

Source: Authors, illustrative example

Next, the indirect programme support costs (IPS) are attributed to the sector outputs. In this example, some expenditure has been allocated based on the time spent by staff on the different outputs and some based on the relative expenditure made to the outputs.

Table 11. Expenditure data and cost allocation

	total	attributed IPS	attributed cost incl. IPS
Water	£143,250	£39,979.41	£183,229
Sanitation	£43,750	£14,020.59	£57,771
IPS	£54,000		
TOTAL	£241,000	£54,000	£241,000

Source: Authors, illustrative example

Step 4 – Analyse data and write up

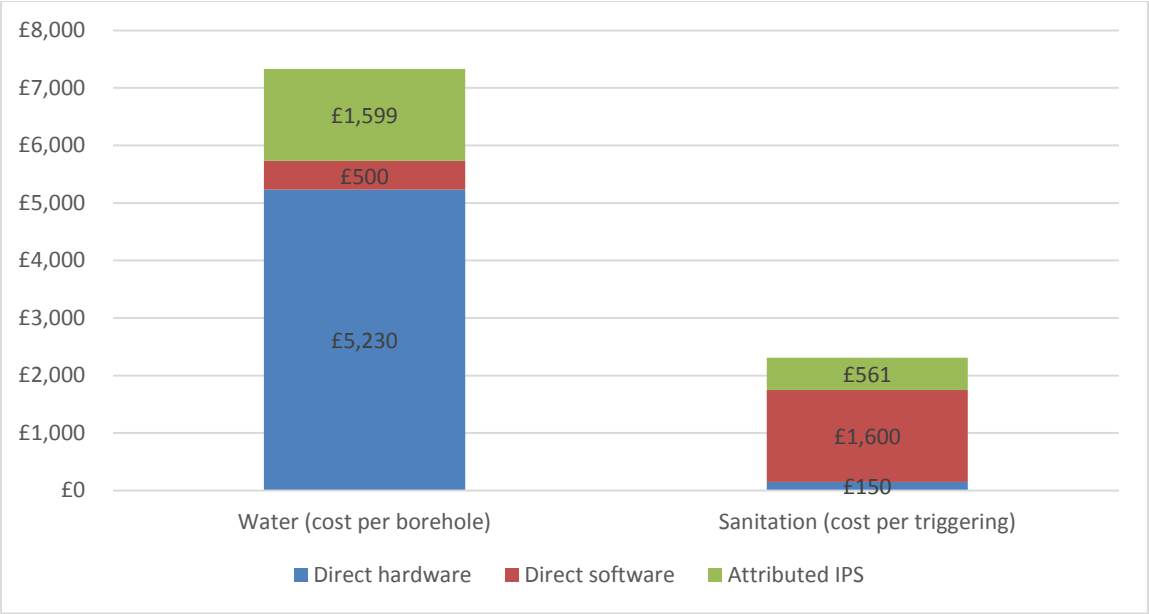
Based on the final cost data including attributed IPS, and the output and sustained actual outcome data above, we can calculate indicators of cost-efficiency and cost-effectiveness in the table below.

Table 12. VFM indicators

	Sector	Full cost incl. IPS	Outputs/outcomes	VFM indicator	Indicator description
Cost-efficiency (cost per intermediary output)	Water	£183,229	25	***£7,329.18***	Cost per functioning borehole constructed
	Sanitation	£57,771	25	***£2,311***	Cost per community triggered
Cost-efficiency (cost per full output)	Water	£183,229	6,250	***£29***	Cost per additional assumed to have access to improved water
	Sanitation	£57,771	7,000	***£8***	Cost per additional person assumed to now be using a basic latrine
Cost-effectiveness (cost per outcome)	Water	£183,229	5,000	***£37***	Cost per new user of improved water
	Sanitation	£57,771	3,000	***£19***	Cost per new user of basic latrine

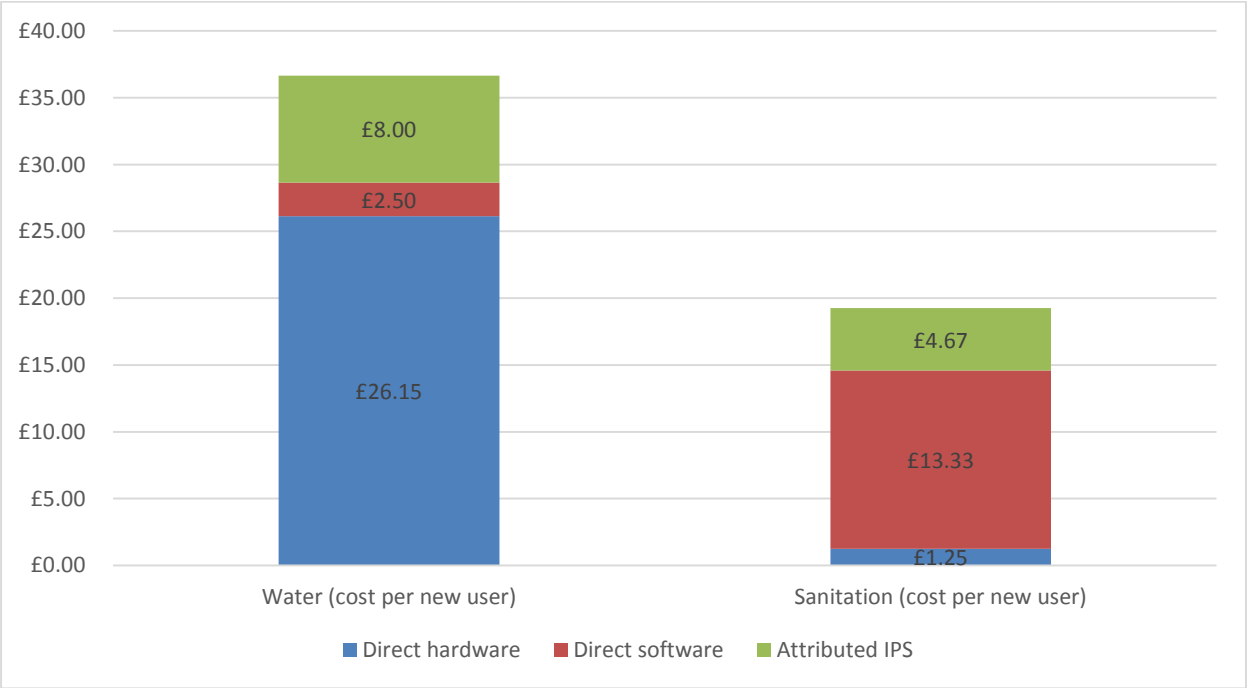
Source: Authors, illustrative example

Figure 3. Cost efficiency indicators, by type of cost



Source: Authors, illustrative example

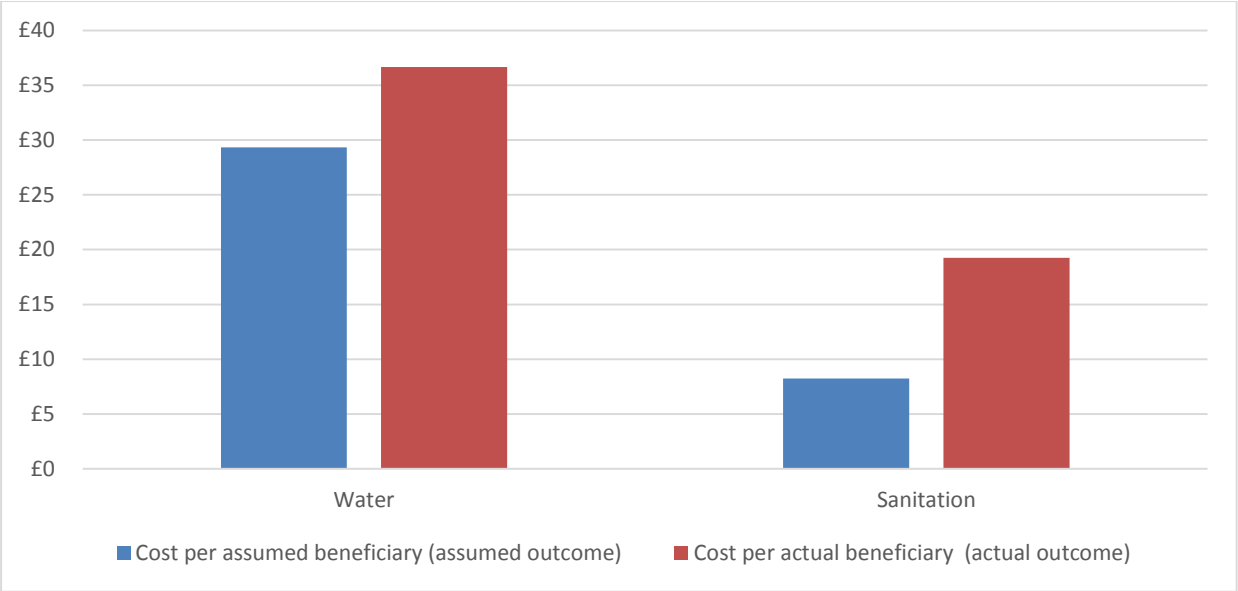
Figure 4. Cost-effectiveness indicators, by type of cost



Source: Authors, illustrative example

The figure below shows how costs per beneficiary are higher when considered on the basis of sustained actual outcomes rather than outputs; this is because programme assumptions (e.g. 250 people per water point) do not always hold in reality.

Figure 5. Difference between assumed outcomes and actual outcomes



Source: Authors, illustrative example

Annex C Tool box

Annex C1 - Tool 1 – The programme description table

Table C 1.Programme characteristics

Country	**Programme Title**		
Project ID		**Status**	
Start Date		**End Date**	
Budget		**Disbursed**	
Sector of intervention	*[Combination of: Water, sanitation, Hygiene, Cross cutting sector support]*		
What is the funding for?	*[Procurement of services, General Budget support, Sectoral budget support]*		
Programme area	*[Remote rural, Rural, Urban fringe, or Dense urban]*		
Programme geographical scale	*[Country, region, district or village; (Number to be specified) + indicate (if we know) whether differentiated approaches were adopted in different areas]*		
Type of programme	*[Humanitarian, Transition, Developmental Development programme or Humanitarian]*		
Purpose of the intervention	*[Main objectives]*		
Type of activities financed	*[Hardware, Software, Financing, Support activities]*		
Programmes activities	*[sector activities - see table 2 below]*		
Programme implementer (type and name)	*[Type of implementer: Not for Profit Organisation, Multilateral organisation, Private service provider, Specify name(s)]*		
Financiers involved	*[bilateral/multilateral donor, government and % the budget etc.]*		
Project Summary	*[narrative summary: indicate whether the programme was restructured at any stage and if so how]*		

Annex C2 - Tool 2 – Data items to collect and possible data sources

Table C 2 . Summary of information to collect

Key informants	Data items to collect		Documents/ Sources
Donor Country Office/ programme implementer	Programme and sector information	• Programme information: history of the sector, the programme	• Project Appraisal document, Business case, Financial Risk Assessment, Annual reviews, Final review, logframe, external evaluation, Operational manual, internal reviews, learning documents
Programme implementer / Financial manager	Programme Expenditure	• Programme expenditure (by activity/ output) : budget and actual costs, unit costs, bills of quantities	• Initial Budget or yearly budget • Annual financial statements of the programme/ Budget execution reports at all level of programme implementation • Audit reports • Supplementary information to determine cost allocation if needed (such as number of staff per department, percentage of their time dedicated to a sub-sector)
Programme implementer/ ME manager **Statistics office**	Programme's Outputs/ Outputs	• Number of outputs achieved (number of water points built, communities reached etc.) • Number of people with access to water and sanitation services by service level;	• National, regional or local level programme M&E reports, including filled-in information for all reporting periods • Baseline and end line survey; Existing Household surveys or ad hoc survey • Technical audits, On-site review, programme logframe. • Sector Performance Assessment Framework
	Sustained actual outcomes	• Number of people with a sustained access to and use of water and sanitation services	
	Impacts	• Health impacts (diarrhoeal diseases)	• Impact evaluations, MICS
		• Health household spending OR unit costs	• Water point and household survey
		• Time to collect water	• Baseline and end line survey
Government (if co-contributor)	Cost (by Activities) - Non Programme Expenditure	• Central government costs of implementing the programme and OM of WASH activities	• Government budget and public expenditure, • Supplementary information to determine cost allocation if needed (such as number of staff per department, percentage of their time dedicated to a sub-sector)
		• Regional/ Local government costs of implementing the programme and OM of WASH activities	
Communities	Household Non-Programme Expenditure	• Household/communities unit costs for access to WASH and OM	• Existing Household surveys or ad hoc survey • Detailed costing/cost benchmarks for typical household investments
NGOs/ contractors	Cost (by Activities) - Non Programme Expenditure	NGO/contractor costs for implementing the programme and OM of WASH activities	• Annual financial statements • Detailed costing / cost benchmarks for a number of representative projects