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Value for Money and Sustainability in WASH Programmes (VFM-WASH)

Assessment of the Value for Money of DFID's Sanitation and Hygiene Programme in Zambia

Final report, short version

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Abstract

Progress in sanitation and hygiene in rural Zambia has been limited since the declaration of the Millennium Development Goals (MDGs) in 2000. To enhance achievements in the sector, the UK Department for International Development (DFID) directed US \$32 million between 2011 and 2016 through the Zambia Sanitation and Hygiene Programme (ZSHP), implemented by UNICEF. By providing access to adequate sanitation and hygiene to 3 million people and 500,000 school children, the ZSHP is expected to contribute to a reduction in the prevalence of diarrhoea among children under 5. This report presents key findings of a value for money analysis of the Zambia Sanitation and Hygiene Programme to date.

A full version of this report is available online at the [VFM-WASH website](#).

The VFM-WASH project

This report is an output of the 'Value for Money and Sustainability in WASH Programmes' (VFM-WASH) project, a two-year research project funded by DFID. The project has two main objectives:

1. 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); and
2. Assess the sustainability of rural WASH services in Africa and South Asia through nationally representative household surveys in Bangladesh, Ethiopia, Mozambique and Pakistan, and a review of secondary data for a larger group of countries.

A consortium of five organisations, led by Oxford Policy Management Ltd., has carried out this project. Research partners include the University of Leeds, Trémolet Consulting, the London School of Hygiene and Tropical Medicine (LSHTM) and Oxfam.

For more information, please visit the [VFM-WASH website](#).

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List of abbreviations

ADC	Area Development Committees
AfDB	African Development Bank
BCC	Behaviour Change Communication Strategy
BU	Boston University
CATS	Community Approaches to Total Sanitation
CBO	Community Based Organisation
CC	Community Champion
CHW	Community Health Worker
CIDRZ	Centre for Infectious Disease Research in Zambia
CLTS	Community Led Total Sanitation
CP	Cooperating Partner
CU	Commercial Utilities
DALYs	Disability Adjusted Life Years
DCTs	Direct Cash Transfers
DEBS	District Education Board Secretary
DFID	UK Department for International Development
DHID	Department of Housing and Infrastructure Development
DHS	Demographic and Health Survey
D-WASHE	District Water, Sanitation and Hygiene Education
EHO/EHT	Environmental Health Officer/Technician
GDP	Gross Domestic Product
GRZ	Government of the Republic of Zambia
HDI	Human Development Index
JMP	WHO/UNICEF Joint Monitoring Program
IMF	International Monetary Fund
LA	Local Authority
LCMS	Living Conditions Monitoring Survey
LSHTM	London School of Hygiene and Tropical Medicine
M2W	Mobile to Web
MCDMCH	Ministry of Community Development, Mother and Child Health
MDG	Millennium Development Goals
M&E	Monitoring and Evaluation
MLEWD	Ministry of Land, Energy and Water Development
MESVTEE	Ministry of Education, Science, Vocational Training and Early Education
MoH	Ministry of Health
MoLGH	Ministry of Local Government and Housing
MoU	Memorandum of Understanding
MTR	Mid-term Review
NGO	Non-Governmental Organisation
NHC	Neighbourhood Health Committee
NRWSSP	National Rural Water Supply and Sanitation Programme
NWASCO	National Water Supply and Sanitation Council
ODF	Open Defecation Free
O&M	Operation and Maintenance
OPM	Oxford Policy Management Ltd.
PIP	Programme Improvement Plan
PMS	Performance Monitoring System
RWSS	Rural Water Supply and Sanitation
RWSU	Rural Water Supply Unit
SAG	Sanitation Action Group
SEA	Standard Enumeration Area
S&H	Sanitation and Hygiene

SNV	Netherlands Development Organisation
SWAp	Sector Wide Approach
TBA	Traditional Birth Attendant
TWG	Technical Working Group
UNICEF	United Nations Children's Fund
UNZA	University of Zambia
USAID	US Agency for International Development
VFM	Value for Money
V-WASHE	Village Water, Sanitation and Hygiene Education
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
WV	World Vision
ZAMCOM	Zambia Institute of Mass Communication
ZCAHRD	Zambia Centre for Applied Health Research and Development
ZSHP	Zambia Sanitation and Hygiene Programme

1 Introduction

1.1 Objectives of this case study

The objective of this study is to assess the value for money (VFM) of the DFID-funded Zambia Sanitation and Hygiene Programme (ZSHP). The ZSHP targets 3 million people and 500,000 school children, and aims to increase access to adequate sanitation and hygiene, with the objective of reducing the prevalence of diarrhoea among children under 5 and contribute to the achievement of MDG7.

This VFM analysis is a tool to assess the effect of key programmatic changes in the efficiency and effectiveness of the ZSHP to achieve its results. This analysis also serves as a guideline for future VFM analyses of similar programmes and projects in the WASH sector.

1.2 Overview of DFID's support to the rural and hygiene sector in Zambia

DFID is providing support to UNICEF in the total amount of US \$32 million (£20.6 million) from November 2011 to March 2016 to develop and implement a rural sanitation programme in 67 districts. The Zambia Sanitation and Hygiene Programme is an important element of DFID's global commitment to reach 60 million people through water, sanitation and hygiene programmes by December 2015. The programme is a key component of Zambia's National Rural Water Supply and Sanitation Programme (NRWSSP), designed to fill a critical programmatic gap – historically, sanitation and hygiene have received less attention and investment than other WASH priorities (e.g., the development of new water supplies).

This initiative is complemented by further investments in rural WASH by the Ministry of Local Government and Housing (MoLGH), the African Development Bank (AfDB), and the Millennium Challenge Corporation (MCC), among other national and international organisations. The ZSHP is the largest programme of its kind that focuses exclusively on rural sanitation and hygiene.

1.3 Scope and methodology of this VFM analysis

Scope of the VFM analysis

This study focusses on the main programme components of the ZSHP, especially Community Approaches to Total Sanitation (CATS)¹ and institutional sanitation. The ZSHP is expected to end in March 2016, so a full analysis of the programme, encompassing outcomes and impacts (as defined below), was not possible. VFM estimations are based on all available information for the period 2012-February 2015.

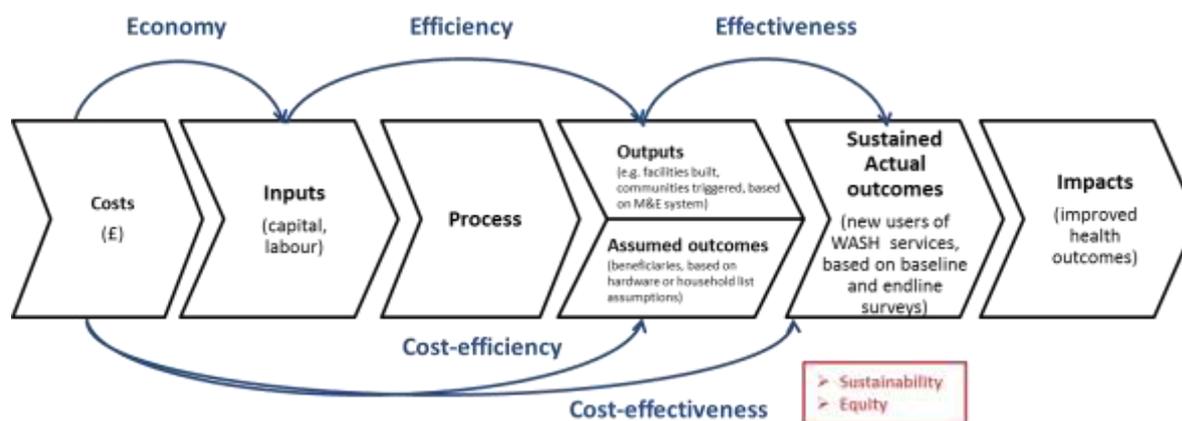
Methodology

This study follows the standardised VFM methodology outlined in the Inception Report submitted to DFID in November 2013 and subsequently laid out in the guidance note: ['How to do Value for Money](#)

¹ CATS is an umbrella term that includes a number of approaches to ending open defecation using demand-led, unsubsidized, community-based models, including CLTS, School-Led Total Sanitation (SLTS), Legal Enforcement (LE), the Total Sanitation Campaign (TSC) and other similar approaches. In the context of ZSHP, CATS refers to CLTS plus Legal Enforcement, with SLTS (i.e. institutional sanitation) as a separate activity.

[analysis for WASH programmes](#)'. Part A of this methodology outlines how value for money can be evaluated along the WASH value results chain, as shown in Figure 1 below.

Figure 1 The WASH results chain



Source: Adapted from DFID WASH Portfolio Review (2013).

The WASH results chain uses the following definitions:

- An **output** is an activity or product (hardware or software) that is the direct result of the programme and which can be counted as such (e.g. number of CLTS campaigns, number of school sanitation facilities built).
- An **assumed outcome** is defined as the number of beneficiaries assumed to have gained access to WASH services as a result of the outputs of the programme's interventions.
- A **sustained actual outcome** measures the actual change in people's lives, and is given by the number of new people *using* adequate WASH services and who *continue to use* it over time.

A key step of the methodology consists of mapping out the programme results chain, as shown in Section 3.2. Following the results chain, VFM indicators were computed across five dimensions: economy, efficiency, cost-efficiency, effectiveness and cost-effectiveness. These estimations are fully described in Section 4.

As a way to benchmark the results, VFM indicators were also estimated for World Vision's Zambia WASH Programme, which aims at increasing the number of people with access to WASH services to improve maternal, new-born and child health as part of their *For Every Child Campaign*.

All annual expenditures and VFM indicators were calculated in nominal US dollars and were then converted to real US dollars using the consumer price index for Zambia from the International Monetary Fund (IMF) database.

1.4 Approach to this VFM analysis

This study was carried out in a series of stages:

- The research team visited Zambia (Chongwe, Lusaka and Namwala) in April 2014 to gain some understanding of how the programme was performing and gather all available information for 2012 and 2013 (i.e. UNICEF progress reports, financial reports, DFID Annual

Reviews and all other relevant programme documentation). The team also met with key sector stakeholders (i.e. AfDB, WaterAid, World Vision and USAID) to learn about other concurrent rural WASH programmes.

- An interim report based on preliminary results was presented to DFID and UNICEF Zambia in June 2014 for review. Due to limited progress on the institutional sanitation component, preliminary results excluded this component.
- Data and documentation was collected again in early 2015 (including data for World Vision's Zambia WASH Programme) and the report was updated and reviewed by UNICEF. This final version thus encompasses data from 2012 to the first quarter of 2015, and provides some recommendations for future VFM analyses.

1.5 Report structure

This case study is structured as follows:

- Section 2 provides a summary of the Zambia context and WASH sector governance;
- Section 3 provides an overview of the Zambia Sanitation and Hygiene Programme;
- Section 4 presents the key findings of this VFM analysis; and
- Section 5 concludes and formulates recommendations for future VFM analyses of the ZSHP.

Further information about this VFM analysis (e.g. underlying assumptions, list of stakeholders interviewed) can be found in the full version of this report, which is available at the [VFM-WASH website](#).

2 Zambia context

This section provides key background information on demographic, socio-economic and WASH sector characteristics for Zambia.

2.1 General characteristics

Demography

The 2010 Census of Population and Housing indicated that there were around 13 million people in Zambia, with an average population growth rate of 3% between 2000 and 2010, being one of the fastest growing populations in Sub-Saharan Africa. Around 60% (7.9 million) of the population in 2010 lived in rural areas, of which 51% was female. Women were also predominant in urban areas and across all provinces. The average household size in Zambia is 5.2 people, with a marginal difference between rural and urban areas (5.3 and 5.1 people respectively).

Zambia is relatively sparsely populated, which compounded by poor road networks and limited infrastructure, increases the costs for the provision of basic WASH services.

Economic and human development

Zambia has been one of the fastest growing economies in the past decade in Africa, with an average GDP growth rate of 7.5% between 2004 and 2014 and an estimated GDP per capita of US \$1,802 (WDI, 2015). However, the country experiences high levels of inequality and poverty: in 2010, Zambia's GINI index was 57% and 74% of the population lived under the US \$1.25 per day poverty line (Ibid, 2015). Despite an increase in life expectancy from 46 years in 2004 to 58 years in 2014, 13% of the population between 15 and 49 is HIV-positive, maternal mortality stands at 280 women per 100,000 live births, and under-5 mortality is equal to 87 per 1,000 live births (Ibid, 2015).

Climate trends

Zambia has a tropical climate, with two broad seasons: a rainy season (November to April) and a dry season (May to October). The 'summer' months are very dry and the country receives very little rainfall, especially between June and August. The wet season rainfall is mainly determined by the tropical rain belt, bringing rain of 150-300mm per month (McSweeney et al, 2010). These seasonal patterns have important implications for all aspects related to WASH, including the availability and quality of water supplies, and the suitability of soils for the construction of sanitation facilities.

Water resources

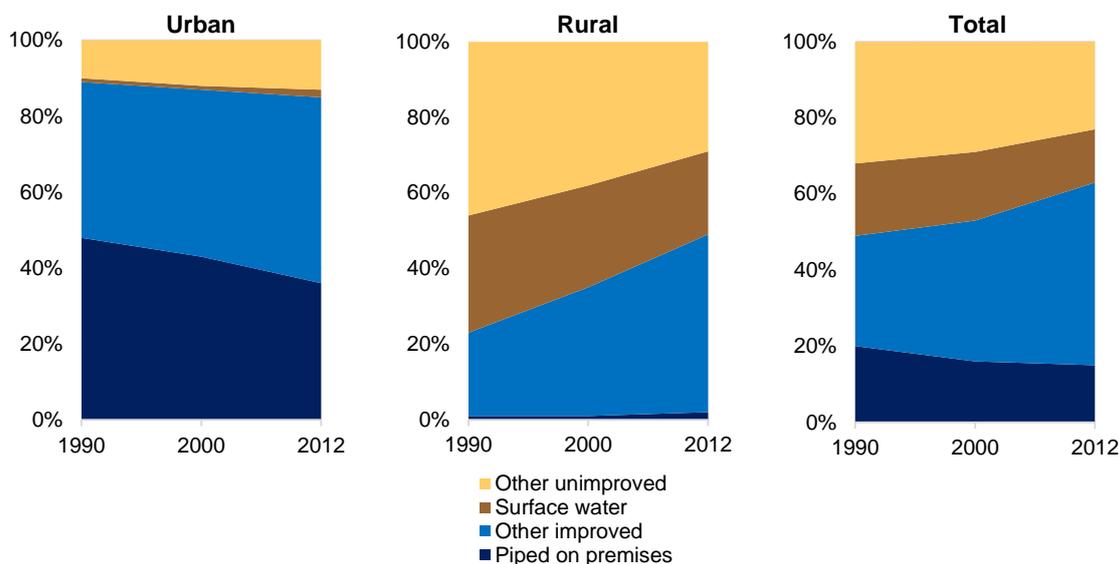
Zambia lies within two large river basins, the Zambezi River basin and the Congo River basin, and is one of the most water secure countries in Sub-Saharan Africa. Nonetheless, surface water resources tend to be unevenly distributed, with the South of the country experiencing local water shortages (GRZ, 2008). Groundwater is thus a key source for some areas, but over-abstraction for agriculture and pollution are becoming important concerns for the sustainability of these resources (Ibid, 2008). Estimates for 2013 suggest that 73% of total freshwater withdrawal was for agriculture, followed by 19% for domestic purposes and 8% for industry (WDI, 2015).

Access to water and sanitation

Zambia experiences high inequities in access to both improved drinking water and sanitation.

Figure 2 shows the trends in the coverage of drinking water between 1990 and 2012. Access to improved drinking water sources has decreased in urban areas, with more people relying on unimproved sources and surface water in 2012 (15%) as compared to 1990 (11%). On the contrary, rural households have reduced their dependency on unimproved water sources for drinking from 77% in 1990 to 51% in 2012. Nonetheless, they are still significantly behind their urban counterparts. Overall, 37% of the Zambian population still relied on unimproved water sources for drinking.

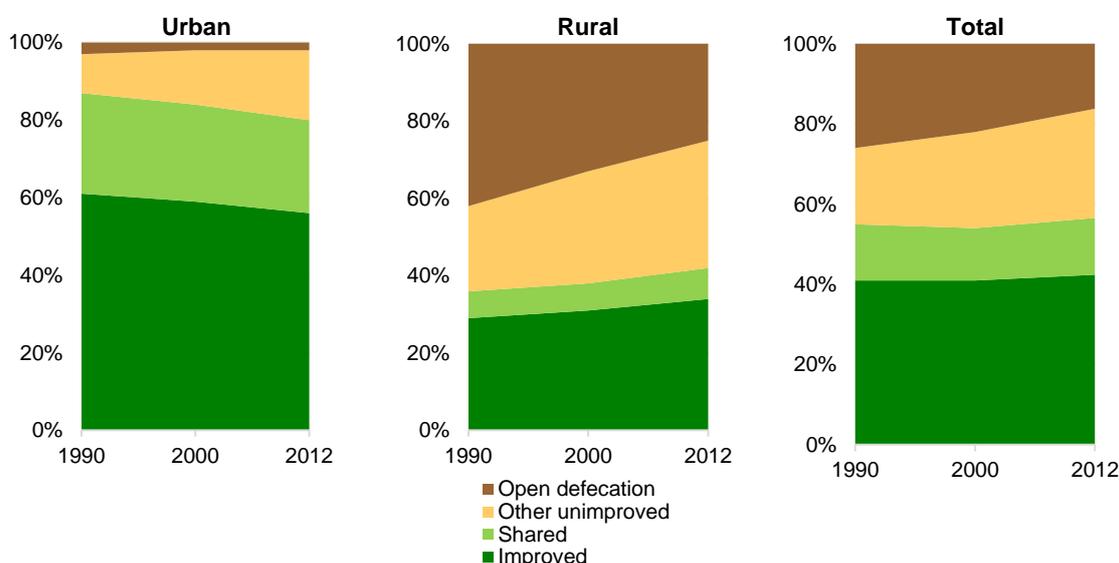
Figure 2 Trends in water coverage by area (1990, 2000 and 2012)



Source: WHO / UNICEF JMP (2015).

Figure 3 shows the coverage of sanitation facilities between 1990 and 2012. Although around 80% of the urban population had access to an improved or shared sanitation facility in 2012, only 42% of the rural population had access to these types of facilities. Indeed, 33% of rural households had access to unimproved facilities and 25% practiced open defecation (OD). At a national level, 27% of Zambian households had access to unimproved sanitation facilities and 16% practiced OD in 2012, with the country being off-track to meet the MDG target by 2015.

Figure 3 Trends in sanitation coverage by area (1990, 2000 and 2012)



Source: WHO / UNICEF JMP (2015).

Hygiene practices

The baseline survey for the ZSHP estimated that 9% of the rural households surveyed had both water and a cleansing agent (either soap, detergent or ash) available for hand-washing near the toilet. The survey also found that around 66% of schools had a designated area for hand-washing, with 59% being nearby the toilet and only 16% having both water and a cleansing agent available.

WASH and health

A lack of sustained access to adequate sanitation and hygiene has resulted in a significant disease burden, borne primarily by the poor, young children, and women and girls. Over 80% of the health conditions presented at health institutions in Zambia are diseases related to poor environmental sanitation (MoH, 2005). Indeed, after neonatal issues (23%), the most important causes of under 5 mortality in 2005 were acute respiratory infections (22%) and diarrhoea (18%).

2.2 Rural WASH sector overview

Legal and regulatory framework

The main programme for the achievement of WASH targets in rural Zambia is the National Rural Water Supply and Sanitation Programme (NRWSSP), launched in 2007 by the Government of the Republic of Zambia (GRZ) through MoLGH. The NRWSSP is aligned with Zambia's Vision 2030, which aims to grant universal access to safe water supply and sanitation for wealth creation and improved livelihoods by 2030 (GRZ, 2006). Key policies include: (1) ensure that RWSS programmes are community-based; (2) develop a well-defined investment programme for sustainable RWSS; (3) promote appropriate technology and research activities; (4) develop a cost-recovery approach to ensure sustainability; and (5) develop a well-articulated training programme (MoLGH, 2007).

Institutional arrangements

A Rural Water Supply and Sanitation Unit (RWSSU) has been established in MoLGH to oversee and monitor the implementation of the NRWSSP. MoLGH is represented at the province level, where staff is being strengthened to take over monitoring and follow-up activities currently carried out at the national level or by development partners. At the district level, the responsibility for implementation and monitoring rests with Local Authorities or District Councils, and the aim is to establish RWSSUs in all rural districts. Finally, at the village or community level, Village Water, Sanitation and Hygiene Education (V-WASHE) committees promote the use of improved sanitation and adequate hygiene practices. Area Development Committees (ADCs) also play a key role in developing community plans for improvements in access to WASH. However, authority at the village level lays with the chiefs and other traditional leaders, who are key in enforcing customs and legislation or establishing local bylaws.

Financial mechanisms

Despite the allocation of water sector responsibilities across several ministries, government disbursements to the sector are relatively low, and historically these allocations have been primarily to support water supply (i.e. water quantity) and water resources development rather than water safety (i.e. water quality), sanitation, or hygiene, though this is currently changing. Cooperating Partners (CPs) provide, on average, 70% of sectoral funding per annum, mostly through stand-alone or area-based projects (DFID, 2011).

Under NRWSSP, a range of funding modalities is currently allowed, including project, basket and sectoral budget support, but the intention is to move towards a Sector Wide Approach (SWAp).

Although most major donors signed a Memorandum of Understanding to implement NRWSSP as a joint programme, the number of separate projects has increased since its launch in 2007 (WHO / UNICEF, 2011). A basket fund is currently being developed, within which CPs will be able to target their funds both geographically and thematically (DFID, 2011).

Thus, the overall emerging approach to funding for rural WASH is based on two fundamental principles:

1. A Sector Wide Approach (SWAp); and
2. Decentralisation of responsibilities to local governments (i.e. District Councils).

This requires the establishment of a single national account for NRWSSP and the transfer of funds to Local Authorities based on an agreed set of rules and principles, including equitable treatment, transparency and predictability.

3 The Zambian Sanitation and Hygiene Programme

This section provides an overview of the ZSHP. It presents the programme's objectives, the activities funded, the programme's results chain and its geographical scope. Overall programme expenditure and its main results are then presented by component, providing the basis for the VFM analysis.

3.1 Programme overview and objectives

DFID is providing support to UNICEF in the total amount of US \$32 million from November 2011 to March 2016 to develop and implement the Zambia Sanitation and Hygiene Programme, a rural sanitation programme targeting 3 million people and 500,000 school children (or 1,000 schools) in 67 districts. The ZSHP is a key component of the NRWSSP, and is complemented by other investments in rural WASH by MoLGH, the African Development Bank, and the Millennium Challenge Corporation, among others. The ZSHP is the largest programme of its kind that focusses exclusively on rural sanitation and hygiene.

3.2 Programme components and the results chain

Community Approaches to Total Sanitation (CATS)

Community-based facilitators engage directly with communities with the goal of ending open defecation through generating a sense of disgust and shame, and mobilising collective action to build and use toilets. CATS is largely consistent with CLTS practices elsewhere (see Kar & Chambers, 2008), and is complemented with the *legal enforcement* of public health legislation in public premises and / or the private sector in towns and peri-urban regions within project areas.

CATS is undertaken through the collaborative efforts of UNICEF, partner NGOs, government staff at national, provincial and district levels, and volunteers and unpaid community agents. Participating villages are triggered by volunteer community champions (CCs), whose activities are coordinated by Environmental Health Technicians (EHTs) at the ward level, and District Councils at the district level. UNICEF and partner NGOs manage the programme at district levels.

Institutional sanitation

UNICEF is building appropriate, gender-sensitive and child-friendly sanitation facilities in 1,000 rural schools, complemented by a hygiene-promotion component – School-Led Total Sanitation (SLTS) – and a school-based management system. UNICEF is currently supporting GRZ to implement two different approaches: an Interim Package and a Low-Cost Package.

The *Interim Package* encompasses gender-segregated toilet facilities (with a ratio of 1 latrine per 50 children) and a nearby hand-washing facility (with water and cleansing agents). At least one latrine per school should also be equipped with bars for disabled children. Hardware investments are complemented by SLTS, which replicates the CLTS initiative in schools relying on teachers as champions.

The *Low-Cost Package* costs less than half of the cost of the Interim Package. Lower costs are achieved through its integration into the sanitation marketing component without reducing quality standards. The Low-Cost Package was piloted between October and December 2014, and has been fully adopted since 2015.

Communication for Development (C4D)

This component reflects the fundamental importance of hand-washing and other hygiene practices that need to accompany improvements in sanitation if anticipated health benefits are to be realised. Activities include both interpersonal communications (through CLTS and SLTS) and mass media campaigns focussing on hand-washing at critical times. UNICEF works with GRZ and MoLGH to develop and implement the Behaviour Change Communication (BCC) strategy.

Sanitation marketing

Sanitation marketing aims to build capacity in the private sector to respond to the increased needs for products and services promoted by CATS. Sanitation marketing can help provide a range of options for those who desire and can afford a more durable design, especially in areas where pits are more likely to collapse. Sanitation marketing is an acknowledgement of the fact that a range of technologies are needed to meet the diverse needs and desires of communities seeking access to sanitation.

Performance Monitoring System (PMS)

A Performance Monitoring System was designed to track project performance at district, province and national levels, and inform reporting using mobile-to-web (M2W) technology. Primary data is collected by CCs and EHTs, enabling monitoring systems to have real-time data.

Table 1 shows the ZSHP results chain for the main programme components. The VFM analysis ranges from December 2011 to December 2014 (except for institutional sanitation, which runs up to February 2015), although not all indicators are available for the whole time period.

Table 1 ZSHP results chain

Activities	Inputs	Outputs	Assumed outcomes	Sustained outcomes	Impact
CATS (CLTS and legal enforcement) and hygiene promotion	Vehicles, motorcycles, bicycles, leaflets, posters, and other supplies	No. of CCs / EHTs / other staff trained	No. of additional people with access to improved sanitation / adequate hand-washing facility	No. of additional people consistently using improved household toilets / practising hand-washing with soap or ash	Reduced diarrhoea morbidity amongst rural children under 5 from 20.4% to 16.3%
	No. of trainings for CCs, EHTs and other local staff	No. of villages triggered			
Sanitation Marketing	Certification events and public recognition of ODF achievements	No. of improved latrines / latrines with hand-washing facilities built	No. of additional children with access to sanitation and hand-washing facilities through the Interim Package / Low-Cost Package		
	Wages and time allocated by staff at all levels	No. of verified ODF villages			
Institutional sanitation	Potential demand and supply study, as well as product design costs	No. of chiefdoms with at least one service provider enabled to respond to household demand	No. of national sanitation technical WG meetings		
	Training of potential suppliers	No. of school staff / other stakeholders trained			
Communication for Development (C4D) campaigns	Supplies to build latrines as agreed in the Interim Package / Low-Cost Package	No. of sanitation and hand-washing facilities built	No. of people reached with hygiene promotion activities		
	No. of trainings for school personnel and other relevant stakeholders	No. of additional schools with Interim Package / Low-Cost Package			
Communication for Development (C4D) campaigns	Wages and time allocated by staff at all levels	No. of communication and mass media broadcasts			
	Payments for partnerships with ZAMCOM and other stakeholders				
	Supplies (leaflets, posters, brochures)	Proportion of implementing districts with at least an annual review / planning process dedicated to S&H interventions			
	Wages and time allocated by staff at all levels				

Source: Authors based on definitions and programme documentation.

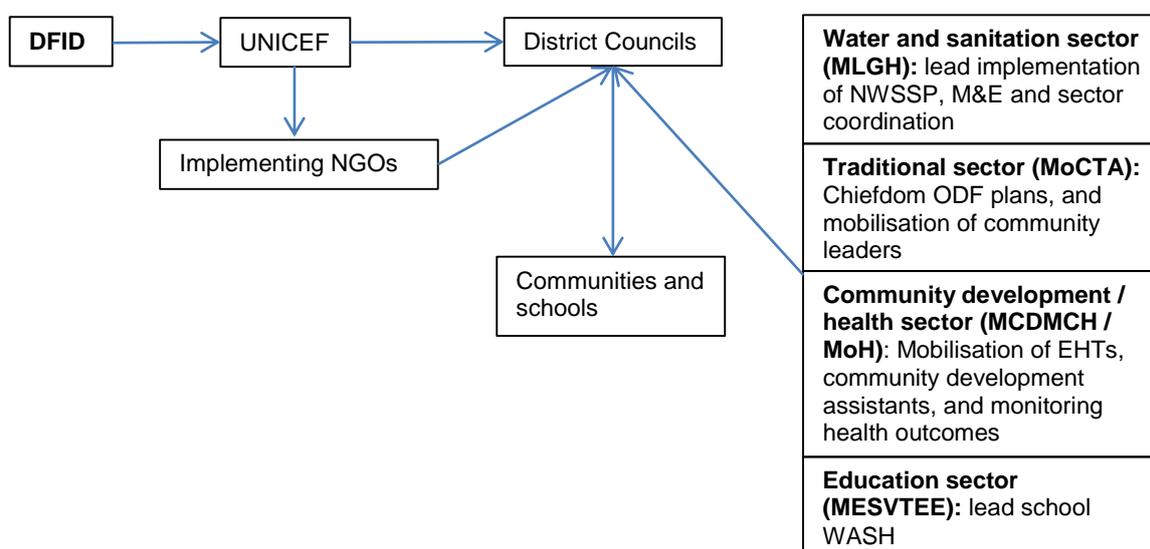
3.3 Funding and expenditure to date

Funding flows

DFID funds to support the ZSHP are routed through UNICEF, which procures supplies and services, and then distributes funds to either NGOs or participating District Councils for training, supervision and reporting. Direct implementation of the programme, as well as monitoring and reporting, is undertaken by district-level government staff and local volunteers. Since the 2013 Scale-Up Strategy, programme implementation has been supported by partner NGOs, which have greatly reduced direct project management burden on UNICEF.

Partner NGOs contribute both directly and indirectly to achieve project results – NGOs may use their own resources to provide services that are not part of the ZSHP, and they use DFID resources to facilitate the achievement of the ZSHP objectives. MoLGH has also increased its dedicated WASH capacity and is providing national coaches and trainers, while other ministries also provide support to the districts.

Figure 4 Simplified funding flow diagram for ZSHP



*All programming is done through District Councils, with funding flowing either directly from UNICEF or via partner NGOs. District Councils are further supported by ministries.

Source: Authors based on UNICEF Progress Reports.

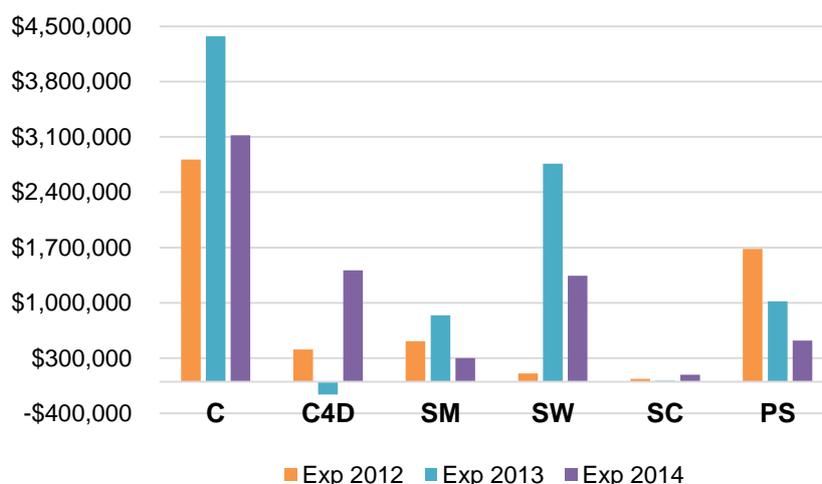
Expenditure by component and type of costs

Expenditure data was collected for the period 2012 to 2014 as documented in UNICEF reports to DFID. Figure 5 shows the distribution of yearly expenditure across different ZSHP components. CATS has been the main component across all years, consistently having the highest participation in total expenditure (from 51% in 2012 to 46% in 2014). The high expenditure on CATS in 2012 is related to initial sunk costs, such as motorbikes and vehicles for RWSSUs as well as bicycles for CCs. On the contrary, expenditure in 2014 is related to the increased focus on post-triggering follow-up and hygiene promotion, given the limited sustainability of hand-washing behaviours, and the expansion of M2W monitoring systems.

The next largest expenditure in 2012 was programme support (30%), which has decreased significantly and encompassed 8% of total expenditure in 2014. The negative expenditure observed

in Communication for Development (C4D) for 2013 is due to the postponement of mass media campaigns, while its subsequent rise in 2014 is driven by new programme cooperation agreements with ZAMCOM and DDB for mass media campaigns, and Barefeet for interpersonal communications. Finally, it is observed that institutional sanitation did not fully begin until 2013, after an agreement was finally reached with the Ministry of Education, Science, Vocational Training and Early Education (MESVTEE) on the Interim Package. This component accounted for 31% of total expenditure in 2013, and is mainly explained by the piloting of the Interim Package in 15 districts and the development of SLTS. By the end of 2014, institutional sanitation encompassed 20% of total expenditure.

Figure 5 Distribution of expenditure by programme components, 2012-2014 (current USD)²



Source: Authors based on UNICEF progress reports.

To have a better understanding of the types of activities financed within each component, expenditure lines were further classified by type of cost, as defined in Table 2.

Table 2 Definitions for types of costs

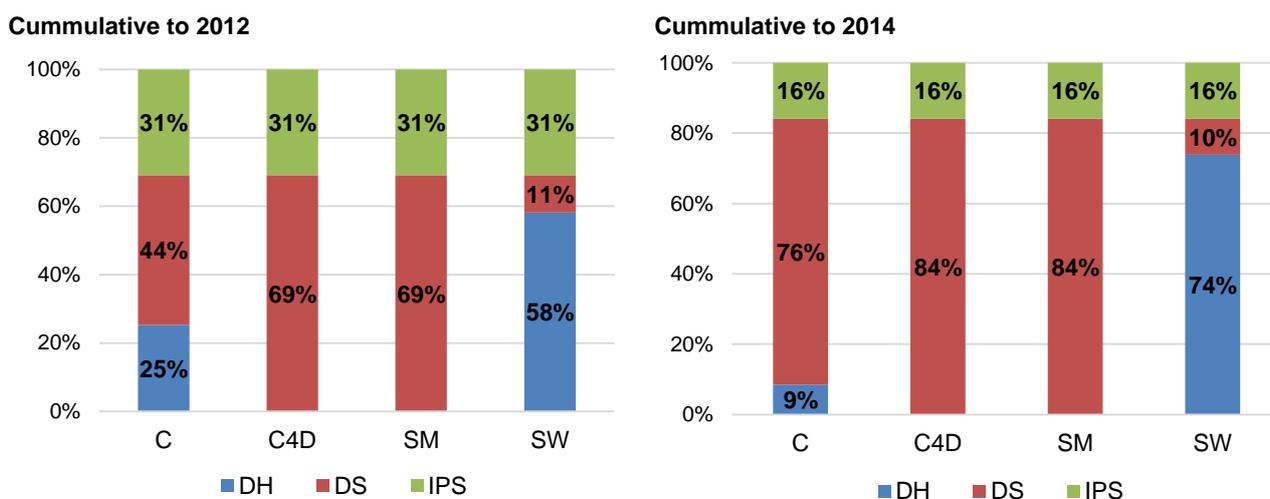
Type of cost	Definition
Direct hardware (DH)	Initial capital cost of putting new services in place. It is commonly associated with infrastructure costs (e.g. construction of sanitation facilities) and may include the cost of associated equipment, labour, and one-off costs of detailed design studies and construction supervision.
Direct software (DS)	Related to direct support activities including expenditure on both pre- and post-construction support directed to local-level stakeholders (e.g. training for community champions).
Indirect programme support (IPS)	Costs that cannot be directly attributed to one activity, including those incurred by programme management and the support provided by the country and head office, e.g. UNICEF recovery costs. IPS can be allocated to a specific component if they directly contribute to the associated outputs and outcomes. Otherwise, they can be allocated to cross-cutting support activities.

² C: CATS; C4D: communication for development; SM: sanitation marketing; SW: institutional sanitation; SC: sector coordination; PS: programme support (includes UNICEF recovery cost).

Given the type of activities under the ZSHP (e.g. CATS, SLTS), most of the funds have been allocated to direct software activities, with the exception of institutional sanitation through which the construction of latrines and hand-washing facilities are being provided. Unfortunately, it was not possible to quantify the value of programme support (PS) allocated to each component, so both sector coordination (SC) and programme support were distributed proportionately to the weight of each component within total expenditure (excluding both SC and PS) in a given time period, i.e. if CATS comprises 30% of funds, then 30% of total programme support was allocated to this component.

Figure 6 shows the distribution of expenditure by both components and cost types up to 2012 and 2014. As described above, programme support costs have decreased since 2012, encompassing a lower proportion of expenditures across all components. As expected, software costs encompass most of the expenditure for communication for development (C4D) and sanitation marketing (SM) activities. Software costs also play a significant role in CATS, as there are no subsidies for the construction of sanitation or hand-washing facilities, and accounted for 44% of expenditure in 2012 and 78% by 2014. On the contrary, hardware costs for CATS have decreased from 25% to 9% as there were significant hardware investments made for post-triggering and M&E activities at the beginning of the programme that are not recurrent, e.g. bicycles, vehicles, printers, etc. On the contrary, hardware costs play a key role for institutional sanitation (58% in 2012 and 74% in 2014), where the ZSHP is directly supporting the construction of school S&H facilities.

Figure 6 Expenditure by components and cost types³



Source: Authors based on UNICEF progress reports.

Contributions from other stakeholders and life-cycle costs

In addition to DFID and UNICEF financial inputs to the programme, GRZ, NGOs and households also provide additional resources (monetary and in-kind) that contribute to achieve programme objectives.

Based on NGO contracts, partner contributions range from 15% for Praekelt-Akros to 38% for World Vision, depending on the type and scope of the services provided. For instance, Praekelt-Akros is mainly giving technical and logistical support related to the development of M2W, while World Vision is actively engaged in CATS and school S&H. There is no information on the total value of

³ Since programme support costs are distributed proportionately to the weight of each component in total expenditure, they encompass the same proportion of expenditure associated with each components.

contributions from GRZ as well as the staff time allocated by UNICEF and partners to ZSHP activities.

Household input costs for latrine construction have not been systematically measured, but are likely to be highly variable due to differences in local costs for materials, design and amenity choices, and the availability of labour. Based on a formative qualitative research from May 2014, the cost of a latrine varies widely from no cost up to US \$275, depending on the type of materials used. From our field visits, a basic latrine with a wooden superstructure and a hand-dug pit can be built in 2 to 5 days with little cost to the household. If more permanent structures are built, costs can rise up to US \$309. Given the variability of hardware costs for a sanitation facility, we have valued household contributions as the opportunity cost of agricultural labour, which ranges from US \$5.1 for 2-days work to US \$12.7 for 5-days work⁴.

For ZSHP results to be sustained over time, specific costs will also need to be incurred over the entire life cycle of the initial investments. At this stage, it is not clear which are the relevant life-cycle costs and who will be financially responsible for them – until March 2016, DFID / UNICEF will continue to be the main funders of software activities (mainly hygiene promotion activities through CATS and SLTS) and M2W monitoring, but in the long-run these life-cycle costs should be borne by GRZ (for institutional sanitation) and communities themselves (for the maintenance of sanitation and hand-washing facilities).

3.4 Results to date

This section presents key results achieved by the ZSHP between December 2011 and December 2014 in terms of outputs, assumed outcomes and sustained actual outcomes.

Outputs and assumed outcomes

Table 3 presents the cumulative output and assumed outcome targets and achievements up to December 2014. There are a few aspects to note regarding the estimation of these achievements:

1. The number of additional schools with an Interim Package does not imply that facilities have been fully built. In the most recent DFID Annual Review it is indicated that while 153 schools have appropriate facilities, only 65 of those have been certified and formally handed-over to schools.
2. The number of people reached with hygiene promotion activities is a composite measure of the number of people reached through interpersonal and mass media communications and those reached exclusively via mass media.

Overall, realisation rates for all outputs and assumed outcomes is quite high, especially for the number of national technical working group (WG) meetings (183%, almost double the expected target) and the number of people reached through hygiene promotion via C4D activities (135%). Although there were issues with the number of verified ODF villages at the beginning of the programme (due to inadequate reporting and “village slippage”⁵), the programme is currently over-performing (108%), reflecting significant efforts on behalf of UNICEF and NGOs to guarantee the sustainability of behaviour change. Similarly, targets related to the number of additional people with sustained access to sanitation and hand-washing facilities have also been over-achieved – 112%

⁴ The daily cost of agricultural labour is equal to US \$2.5 (current prices of 2013). This was estimated as half of Zambia's GDP per capita (US \$1,845) divided by 365 days. The GDP per capita figure was obtained from the 2015 World Development Indicators.

⁵ This refers to cases of villages that were reported ODF, but who lost this status upon formal verification or a few months after verification.

and 113% respectively. It must be noted though that access does not imply usage (i.e. outcome target), especially regarding hand-washing, for which DFID reviews suggest there has been lower uptake rates.

Finally, output and assumed outcome realisation for institutional sanitation is significantly behind at 31% for both the number of schools and children with access to adequate S&H facilities. This is not surprising due to delays during the first year of ZSHP, which postponed actual implementation until the last quarter of 2013. It must be highlighted though that achievements through the implementation of the Low-Cost Package have not been taken into account, so results may be slightly underestimated.

Table 3 Output and assumed outcome realisation (cumulative to Dec 2014)

Indicators	Planned	Achieved	Realisation (%)
Outputs			
No. of verified ODF villages	4,500	4,875	108%
No. of additional schools with an Interim Package / Low-Subsidy Approach	500	153 ⁽¹⁾	31%
No. of national sanitation technical working group (WG) meetings (per year)	6	11	183%
% of implementing districts with at least a S&H annual review / planning process	66%	67%	102%
Assumed outcomes			
No. of additional people with access to improved sanitation	2,000,000	2,240,000	112%
No. of additional people with access to an adequate hand-washing facility	2,000,000	2,267,000	113%
No. of additional children with access to S&H facilities through the Interim Package / Low-Subsidy Approach	250,000 ⁶	76,500 ⁽¹⁾	31%
No. of people reached with hygiene promotion activities	4,650,000	6,290,000	135%

⁽¹⁾ Results achieved by February 2015.

Source: Authors based on UNICEF progress reports and 2015 DFID Annual Review.

Sustained outcomes

Based on the most recent programme log frame, the sustained outcome for the ZSHP is articulated as “3 million people consistently using improved household toilets and practising hand-washing with soap or ash thereafter”, which is measured by the proportion of the population in target districts using improved sanitation facilities with a functional hand-washing facility near the toilet, and includes both school-based and community-based metrics.

Baseline estimated that the use of improved sanitation was 36%, with 35% of households reporting practising open defecation at least occasionally. Although 20% of the households reported they had a specific place for hand-washing, only 8% of households had both water and a cleansing agent (i.e.

⁶ The number of additional children with access to sanitation and hand-washing facilities is based on the assumption that there are 500 children per school.

soap, detergent or ash) onsite. Moreover, only 7% of schools met the proposed minimum standards for ZSHP⁷.

The revised baseline estimate for June 2013 indicates that 8% of the population in targeted districts used an improved sanitation facility with a functional hand-washing facility near the toilet. M2W data extrapolation for December 2013 also suggest that that the programme met the expected target of 25% of the population using adequate S&H facilities. The next measurement was expected at the end of 2014, for which the target is 35%, but this information is not available. A final estimate will be produced in December 2015, for which the population with access in targeted districts will be measured against a target of 51%.

Impacts

The direct intended impact of the programme is a reduction in diarrhoea morbidity amongst rural children under five years of age, as measured by the two-week prevalence of diarrhoeal disease. The target is 16% by March 2016 as compared to a baseline level of 20% in June 2013. The end-line survey also aims to measure acute respiratory infections (ARI), stunting, and a range of other secondary outcome measures.

An independent consultant funded by DFID also carried out a cost-benefit analysis for the ZSHP to estimate the health costs and disability-adjusted life years (DALYs) averted by the programme, building on information from the ZSHP Business Case. A total of 236,000 DALYs may be averted after considering the projected reductions in diarrhoea, other infections and malnutrition. Total savings may also amount to US \$100 million.

⁷ The minimum standard is defined by a maximum child to cabin ration of 50:1, gender segregated toilet facilities, and a nearby hand-washing facility, allowing more than 1 person to wash hands simultaneously. At least one latrine per school should also be equipped with bars for access by disabled children.

4 Results of the VFM analysis

In this section, we present the results of the VFM analysis based on key indicators reflecting economy, efficiency and cost-efficiency, and effectiveness and cost-effectiveness, as defined in Table 4 below.

Table 4 VFM indicators for ZSHP

	Indicator	Definition
Economy	Unit costs of: <ul style="list-style-type: none"> • CLTS / SLTS training • Village triggering • Household latrine • School Interim Package • School Low-Cost Package • School Low-Subsidy Approach 	These indicators look at the cost of inputs and whether the procurement of the programme was efficient and resulted in competitive prices
Efficiency	<ul style="list-style-type: none"> • Proportion of villages that have been verified ODF following triggering • No. of people living in villages that have been verified ODF • No. of children in schools that have implemented the Interim Package / Low-Subsidy Approach 	These indicators measure the efficiency of the programme interventions in turning inputs into outputs.
Cost-efficiency	Programme unit cost per: <ul style="list-style-type: none"> • Verified ODF village • New person that gained access to an improved sanitation facility • New person that gained access to a hand-washing facility • New pupil that gained access to the Interim Package / Low-Subsidy Approach • New person reached with hygiene promotion activities 	These indicators measure the costs to implement one unit of output and/or reach one beneficiary.
Effectiveness	<ul style="list-style-type: none"> • Proportion of people in target districts that are using improved sanitation and hand-washing facilities (ideally 2 years after the programme is finalised) 	These indicators measure how well outputs are converted into sustained outcomes and impacts.
Cost - effectiveness	Programme unit cost per: <ul style="list-style-type: none"> • New user of improved sanitation and hand-washing facilities (ideally 2 years after the programme is finalised) 	These indicators measure the cost of achieving one unit of outcome or impact.

Economy

Given the level of disaggregation of UNICEF expenditure reports, it is not possible to directly and unambiguously calculate unit costs for all inputs. For example, detailed financial accounts that show the amounts spent per training session and triggering event are needed to estimate the total unit cost of a village triggering. There is also limited information on the amount spent by households to

build latrines and hand-washing facilities, which depends both on the location and materials used, and on the full costs associated with the provision of sanitation and hygiene services in schools.

Table 5 presents some estimations of the unit costs for selected inputs. Estimated costs for CLTS and school S&H facilitator trainings, as well as village and school triggering facilitation were extracted from NGO budgets for Plan, CIDRZ, Village Water and World Vision. Thus, these costs are not representative and may not reflect actual expenditures.

Estimations suggest that the cost of a CLTS training for champions was around US \$45 per person per day in Chibombo and Mansa districts, as budgeted by Plan. Training for school facilitators is more expensive, with costs per person ranging between US \$56 for Plan to US \$179 for Village Water. The higher costs for Village Water are due to operations in harder to reach areas as well as the size of the populations targeted. On the other hand, the cost for a triggering facilitation in schools ranges between US \$41 to \$248, as budgeted by Plan and World Vision, while village triggering facilitation ranges between US \$81 for Village Water to \$174 for World Vision. Differences in unit costs are also likely to be driven by geographical and population factors.

Finally, the unit cost of a school toilet is equal to US \$925 for the Interim Package and US \$424 for the Low-Cost Package. This represents a significant reduction in monetary costs from the original design requested by MESVTEE (US \$2,000 per drop hole). Although the ratio of students to drop hole was increased with the Interim Package as compared to the pre-programme design, from 25:1 to 50:1, this is still a significant improvement as compared to the current rural standard of 100:1. It is important to note that these figures do not encompass costs for hand-washing facilities, software costs associated to the provision of school facilities, and in-kind contributions required from parents through the Low-Cost Package.

Table 5 VFM economy measures

Unit costs	Current USD
CLTS training (per person per day)	\$45
Village triggering facilitation (per village)	\$81 – \$174
Training of school S&H facilitator (per person per day)	\$56 – \$179
School triggering facilitation (per school)	\$41 – \$248
Household latrine (estimated as the opportunity cost of labour)	\$5 – \$13
School toilet (Interim Package) (per drop hole)	\$925
School toilet (Low cost model) (per drop hole)	\$424

Source: Authors based on UNICEF progress reports and NGO budgets.

Efficiency and cost-efficiency

Efficiency and cost-efficiency indicators were estimated using the output/assumed outcome and expenditure information from UNICEF progress reports and DFID Annual Reviews up to December 2014. Additional estimates were carried out using NGO liquidation accounts and reports for contractual deliveries, which allow for comparisons across both NGOs and districts.

There are several assumptions and caveats to the indicators estimated. First, UNICEF expenditure figures follow International Public Sector Accounting Standards (IPSAS), and thus do not represent actual disbursements, but are rather the sum of both commitments and actuals. The definitions for these expenditure components are shown in Table 6 **Error! Reference source not found.** Neither of these lines can be directly linked to outputs and assumed outcomes – it is only possible to do this with liquidation figures, which are not available neither at the level of disaggregation needed to perform a thorough VFM analysis nor for the whole time frame. After several discussions with

UNICEF, and for comparison purposes, it was agreed that 'actuals' lines would be used, but these would be linked to outputs three months later (i.e. the following quarter), as this is generally the average time that takes for an 'actual' to be liquidated (e.g. actuals in 2013Q2 are linked to outputs in 2013Q3 and so on). Given that UNICEF financial reports do not differentiate actuals for neither 2012 nor 2013Q1, the VFM analysis spans 2013Q2 – 2014Q4.

Table 6 **Definition of expenditure elements**

Element	Definition
Commitment	"Engagement (contract, agreement or undertaking) that has been entered into for the current year or one or more future years in respect of a programme activity, or the support budget". Once the funds are committed, they cannot be used for any other purpose.
Actual	Cash amount that has been disbursed for payment.
Liquidation	Moment when a NGO reports on the activities implemented, the results are achieved and the total monetary resources are spent.

Source: UNFPA (2009) and authors based on field interviews.

Second, it is necessary to account for inflation as we are assessing VFM trends across time periods. We have used the Consumer Price Index (CPI) as reported in the International Financial Statistics (IFS) of the International Monetary Fund. The CPI was re-calculated to make 2013Q2 the base time period (2013Q2 = 100). All adjustments for inflation were made after VFM indicators were calculated in nominal terms.

Finally, current estimations do not account for additional external costs covered by GRZ, households or partner NGOs.

Table 7 presents overall efficiency and cost-efficiency indicators, in real prices of 2013Q2. **Error! Reference source not found.** shows efficiency and cost-efficiency indicators for 2014 by NGO, based on NGO liquidation accounts and reports for contract deliveries.

Table 7 Cumulative efficiency and cost-efficiency indicators (2013Q2 = 100)

	2013				2014			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Efficiency								
Percentage of villages that have been verified ODF after triggering		2.5%	n.d.	17.7%	n.d.	n.d.	n.d.	22%
Number of people living in villages that have been verified ODF		27,262	197,005	284,448	293,386 ⁸	302,323	381,922	566,454
Number of schools that have gained access to S&H facilities	0	0	0	15	32	69	n.d.	153 ⁹
Number of pupils in schools that have gained access to S&H facilities	0	0	0	7,500	16,000	34,500	n.d.	76,500
Cost-efficiency								
Programme unit cost per verified ODF village			\$2,726.9	\$2,263.1	\$1,925.1¹⁰	\$2,538.9	\$2,173.6	\$1,584.3
Direct hardware			\$448.6	\$301.7	\$284.5	\$270.1	\$215.7	\$141.7
Direct software			\$1,647.3	\$1,524.8	\$1,347.6	\$1,925.6	\$1,671.7	\$1,227.5
Programme support (indirect & direct)			\$631.0	\$436.6	\$293.1	\$342.3	\$286.3	\$215.1
Programme unit cost per new person gaining access to an improved sanitation facility			\$8.3	\$6.2	\$4.5	\$4.7	\$4.0	\$3.4
Direct hardware			\$1.4	\$0.8	\$0.7	\$0.5	\$0.4	\$0.3
Direct software			\$5.0	\$4.2	\$3.2	\$3.5	\$3.1	\$2.6
Programme support (indirect)			\$1.9	\$1.2	\$0.7	\$0.6	\$0.5	\$0.5
Programme unit cost per new person gaining access to a hand-washing facility			\$8.2	\$4.8	\$3.5	\$4.7	\$4.0	\$3.5
Direct hardware			\$1.4	\$0.6	\$0.5	\$0.5	\$0.4	\$0.3
Direct software			\$5.0	\$3.2	\$2.4	\$3.5	\$3.1	\$2.7
Programme support (indirect)			\$1.9	\$0.9	\$0.5	\$0.6	\$0.5	\$0.5
Programme unit cost per person reached with hygiene promotion activities			\$0.03	\$0.02	\$0.04	\$0.05	\$0.07	\$0.14
Direct hardware			\$-	\$-	\$-	\$-	\$-	\$-
Direct software			\$0.02	\$0.02	\$0.03	\$0.04	\$0.06	\$0.12
Programme support (indirect)			\$0.01	\$0.00	\$0.01	\$0.01	\$0.01	\$0.02
Programme unit cost per pupil gaining access to S&H in schools				\$127.2	\$128.9	\$41.0	\$-	\$38.4
Direct hardware				\$99.3	\$102.7	\$32.0	\$-	\$29.7
Direct software				\$3.3	\$6.5	\$3.4	\$-	\$4.2
Programme support (indirect)				\$24.5	\$19.6	\$5.5	\$-	\$5.2

Source: Authors based on UNICEF progress reports.

⁸ Based on a predicted number of verified ODF villages, as there was no output data for this quarter.

⁹ Figure for February 2015 as reported in the 2014 DFID Annual Review.

¹⁰ Based on a predicted number of verified ODF villages.

Efficiency

We have limited efficiency VFM indicators as outputs (as defined in the VFM methodology) have not been consistently reported in UNICEF progress reports.

Although information for the ODF conversion rate (i.e. the proportion of triggered villages that have been verified ODF) is only available intermittently (due to poor data on the number of villages triggered), the trend shows a significant improvement between 2013Q2 and 2014Q4, with the biggest change occurring between Q2 and Q4 of 2013. This is probably related to the approval and implementation of ODF verification and certification procedures around mid-2013, which enabled monitoring prior to the launch of M2W. Although DFID suggests that a 22% ODF conversion rate is low for a large CLTS programme, they also highlight that if reported ODF villages are considered (instead of verified villages), the conversion rate rises to over 30%, which is around the expected rate. Thus, the low efficiency in the ODF conversion rate is not indicative of poor output delivery, but is partly explained by the fact that UNICEF and partners chose to wait a couple of months between ODF status reports and ODF status verifications to ensure that delivered results are being sustained.

An upward (positive) trend is also observed in the number of people living in villages that have been verified ODF, as the number of verified-ODF villages has increased across time. The growth rate between quarters as compared to absolute values is likely to be a better measure of the progress in this indicator. Although huge increases in the number of people living in ODF villages were observed between 2013Q2 and 2013Q3 (over 600% increase), the growth rate between Q3 and Q4 decreased to 44% and later to 26% between 2014Q2 and 2014Q3. The growth rate of people living in ODF villages seems to be increasing again, reaching 48% between 2014Q3 and 2014Q4. The variability of this trend can be explained by (1) 'slippage' rates (i.e. villages that were declared ODF but that have been unable to maintain this status), especially at earlier stages of the programme; (2) increased monitoring efforts since the introduction of M2W; and (3) post-triggering strengthening.

The estimations for the number of people living in ODF villages is based on a 129 people per village estimate from a UNICEF progress report. Besides the fact that this estimate may be outdated, an average figure is unable to truly capture province and district variation. The best way to amend this is by using actual population data, as captured through M2W systems. In addition, given issues with ODF verification during the first year of the ZSHP, the accuracy of ODF verification figures may be questionable, as would be their comparability across time.

The school S&H component faced significant delays during the first year and a half of implementation of the ZSHP due to disagreements between MESTVEE and UNICEF on the design of S&H facilities for primary schools. However, UNICEF and partners have made considerable efforts to 'catch-up' with planned outputs, with 153 schools in February 2015 having access to adequate sanitation and hygiene through the Interim Package as compared to just 15 in 2013Q4. Assuming there is an average of 500 pupils per school, the number of new pupils with access to S&H facilities has increased from 7,500 to 76,500 (a rise of over 9 times the initial achievement). It must be noted that results for the Low-Cost Package have not been taken into account, as implementation started in 2015, and so the number of new children with access to S&H facilities in schools may be underestimated.

Cost-efficiency

The cost-efficiency indicators estimated only capture the costs of the programme per se – household costs, GRZ and NGO contributions, and other ZSHP-related expenditures have not been included as there is no accurate available data.

Cost-efficiency has increased for all programme components, with the exception of the unit cost per person reached with hygiene promotion activities (i.e. C4D). Although the number of people reached has increased significantly, especially after DFID's recommendations to give more focus to hygiene promotion activities in early 2014 (due to low rates of hand-washing and sustainable behaviour change), this has been achieved at a marginal increase of US \$0.09 per person since the beginning of 2014. This increase is mainly related to direct software costs, likely to be explained by the new contract agreements with ZAMCOM and Barefeet. The programme cost per person reached with hygiene promotion activities is currently estimated at US \$0.13, which is below DFID estimations of US \$0.19.

The programme unit cost associated with verified ODF villages shows some variability between 2013Q3 and 2014Q2, and an important decline during the last half of 2014, reaching US \$1,584 per village. Given that communities do not receive any subsidies for the construction of S&H facilities, costs are mainly driven by software costs. Both programme support and direct hardware costs have consistently decreased across time. Aside concerns with data reliability, cost-efficiency dynamics for verified ODF villages are explained by the delay in establishing verification and certification processes (disseminated in March 2013 and implemented since mid-2013), 'village slippage', and the strengthening of post-triggering monitoring and events to guarantee the sustainability of behaviour change. Cost-efficiency improvements (for all indicators) are also a reflection of improved delivery with NGOs as facilitators (which began in mid-2013) and the expansion of M2W monitoring during 2014.

Programme unit costs per new person gaining access to improved sanitation or a hand-washing facility are very similar given they are based on the same estimations for the number of people gaining access through CATS. Compared to mid-2013, unit costs have decreased from US \$8.3 to \$3.4 by the end of 2014, showing a significant increase in CATS cost-efficiency. Cost-efficiency indicators for institutional sanitation are generally less reliable due to delayed output delivery and to the exclusion of results achieved through the Low-Cost Approach, which drives the estimations upwards. To minimise the margin of error, we will focus on achievements since 2014Q2. Assuming there are 500 students per school, the cost-efficiency of the programme per new child gaining access to S&H facilities increased since mid-2014, achieving a unit cost of US \$38.4 by the end of 2014. Increased cost-efficiency in school S&H is mainly explained by a reduction in hardware costs, which is consistent with UNICEF's increased focus on SLTS activities.

Cost-efficiency indicators for NGOs were only calculated for a few assumed outcomes given the type of information available in NGO liquidations and reports for contractual deliveries. Funds allocated to CATS and hygiene promotion were matched with CATS achievements, while funds related to school S&H were matched exclusively with school S&H results.

As shown in **Error! Reference source not found.**, costs vary significantly by NGO, which is expected as each NGO works in a distinct set and number of districts. Plan has the highest programme unit costs per ODF verified village, ranging between US \$1,163 and \$2,966 as compared to US \$462 – \$1,067 for Afya Mzuri. However, Afya Mzuri has the highest programme unit cost per new person with access to improved sanitation, ranging between US \$4.6 – \$10.7, compared to US \$0.8 – \$2.2 for Plan. As expected, programme unit costs per reported ODF village are lower than the costs per verified ODF village, given that verification encompasses additional follow-up activities, administrative procedures and celebration meetings and events. Finally, the unit cost per pupil with improved knowledge and practices of S&H was estimated at US \$4.2 for CIDRZ. It is important to note that the cost per pupil is not directly comparable to the estimated overall unit cost (Table 7), as the latter refers to actual access to S&H in schools and not just improved knowledge and practices – the CIDRZ unit cost estimate is actually more comparable to the software component (US \$3.0) in the overall unit cost per pupil gaining access to improved S&H in schools.

Table 8 Cost-efficiency indicators by NGO, 2014

Indicator	Afya Mzuri	Praekelt-Akros	CIDRZ	Plan	World Vision
Programme unit cost per reported ODF village	n. d.	n. a.	\$448 – 812	\$295 – 751	n. d.
Programme unit cost per verified ODF village	\$462 – 1,067	n. a.	n. d.	\$1,163 – 2,966	\$950 – 1,835
Programme unit cost per new person gaining access to an improved sanitation facility	\$5 – 11	\$1 – 5	\$2 – 4	\$1 – 2	\$4 – 5
Programme unit cost per pupil with improved knowledge and practices of S&H	n. d.	n. a.	\$4	n. d.	n. d.

Source: Authors based on NGO liquidation account and reports for contractual deliveries.

Effectiveness and cost-effectiveness

To date there is limited information for outcomes. However, estimates for December 2013 (based on M2W information) suggest that the planned target for this date was achieved, with 25% of the population using improved sanitation and hand-washing facilities. Using 2010 Census information for targeted districts (as shown in the Scale-Up Strategy), this is equivalent to 1,612,594 new users of improved S&H facilities. Based on cumulative programme actuals up to December 2013, the total programme unit cost per user was estimated at US \$4.10. This figure is slightly lower than the US \$6.67 estimated in the 2014 DFID Annual Review, but is still higher than the US \$2.96 anticipated in the Business Case.

More accurate data (as compared to extrapolated information from 15 districts) is needed to deliver reliable estimates for ZSHP overall effectiveness and cost-effectiveness.

Table 9 Planned and achieved outcomes

	Indicator		Baseline (June 2013)	December 2013	December 2014	December 2015
3 million people with sustained access to improved sanitation facilities	Proportion of schools that have appropriate sanitation and hand-washing facilities (Interim Package)	Planned	6.8%			
		Achieved				n. a.
	Proportion of the population in target districts using improved sanitation and hand-washing facilities	Planned	8.3%	25%	35%	51%
		Achieved		25% ¹¹		n. a.

Source: Programme log frame and Hamer et al (2014).

¹¹ Based on extrapolation of data from M2W monitoring in 15 districts.

Providing some context: VFM analysis of World Vision's Zambia WASH Programme

As a way to benchmark the VFM indicators of DFID's Zambia Sanitation and Hygiene Programme, we also assessed the VFM of World Vision's (WV) Zambia WASH Programme. This is a five-year programme (2010 – 2015) that aims to increase access to WASH services to improve maternal, new-born and child health. The Programme originally aimed to give access to improved water to 300,000 people (including 100,000 children) and adequate sanitation and hygiene education to 91,600 people. In 2013, the WASH Programme was extended to reach around 683,000 people.

Similar to the ZSHP, WV's Zambia WASH Programme is also based on community sensitisation and mobilisation (i.e. CLTS) and hygiene promotion campaigns to provide access to sanitation and hygiene and encourage behaviour change. The Programme also provides improved sanitation facilities to both schools and clinics. However, WV's WASH Programme has a large component dedicated exclusively for the construction and rehabilitation of water points and complementary software activities (e.g. capacity building, mobilisation of water committees, etc.). The latter activities are not encompassed in the ZSHP.

Total programme expenditure between 2011 and 2014 for WV's WASH Programme amounted to US \$16 million, around half of the budgeted amount for the ZSHP. Most of this expenditure was allocated to programme support (47%) and the water component (41%), with only 9% and 3% of total expenditure allocated to sanitation and hygiene respectively. On the contrary, given the nature of the programme, expenditure for the ZSHP has been mainly allocated to sanitation and hygiene, with water investments being exclusively financed with leveraged resources from NGOs.

Similarly to achievements through the ZSHP, WV's WASH Programme exceeded planned targets, with the number of communities receiving training for sanitation, hygiene and solid waste management more than doubling expected outputs. The number of certified ODF communities also quadrupled expected targets: around 22% of communities triggered had been certified ODF by the end of 2014. This ODF conversion rate is the same as the one observed for ZSHP to date.

Regarding cost-efficiency, the cost per certified ODF community for WV's WASH Programme was estimated at US \$1,645 between 2012 and 2014, as compared to US \$1,584 for ZSHP. The cost per new person that gained access to an improved sanitation facility, including students, was estimated at US \$11. This is not directly comparable to ZSHP estimations, which differentiate between people at the community level and pupils, for which costs amount to US \$4 and US \$38 respectively. However, given increased access to sanitation and hygiene in schools through the ZSHP, average costs are likely to converge between the two programmes. Finally, the cost per person that gained access to a hand-washing facility through WV's WASH Programme (also including students) was estimated at US \$3, which is very similar to the cost observed for the ZSHP (US \$3.5).

Overall, the VFM analysis for WV's WASH Programme suggests that the VFM indicators estimated for the ZSHP are within the range of expected costs for a sanitation and hygiene programme in Zambia, with cost-efficiency indicators being relatively similar across both programmes. Further in-depth analysis and qualitative research is required to be able to identify any potential similarities in implementation approaches, and have a better understanding of the drivers of VFM to encourage learning for future WASH sector investments.

5 Summary of findings and recommendations

5.1 Key findings

UNICEF has made notable progress in the achievement of results for the Zambia Sanitation and Hygiene Programme since it started its implementation in early 2012. Limited progress was observed during the first year due to (1) poor post-triggering follow-up; (2) limited programme ownership and motivation at district and community levels; (3) sporadic monitoring of results achieved; (4) disagreements between UNICEF and MESVTEE on the design and cost of school sanitation facilities; and (5) 'too big a scale' (in terms of geographical spread) for UNICEF to implement on its own.

The launch of the Project Improvement Plan in January 2013, the involvement of NGOs as CLTS facilitators in March 2013, and the Scale-Up Strategy launched in June have all contributed to the acceleration in the achievement of results since mid-2013. The achievement of outputs and outcomes has also been enabled by adequate monitoring through the use of mobile-to-web systems. The ZSHP is currently over-performing or meeting all its milestones, with the exception of institutional sanitation, for which full-scale implementation began in January 2014.

Besides meeting its targets, the ZSHP currently represents value for money, showing significant improvements in efficiency and cost-efficiency indicators. The total programme cost per new person gaining access to sanitation or hand-washing facilities currently stands at US \$3.4 while the cost per new child with access to sanitation and hand-washing facilities in schools is around US \$38.4. These costs are comparable to DFID estimates and seem to be competitive between implementer NGOs. Furthermore, total programme cost per new user of sanitation and hand-washing facilities in December 2013 was estimated at US \$4.10, which is still above the anticipated cost per user encompassed in the Business Case (US \$2.96) but is likely to decrease if results continue to be sustained over time and the coverage of sanitation and hygiene in schools is expanded.

Conversations with UNICEF and other sector stakeholders suggest that ZSHP has also had an important impact on sanitation advocacy and in leveraging GRZ funds allocated to the sector. Indeed, it is well-known across the sector that the programme has enabled the adoption of CATS by GRZ as the 'gold standard' for the implementation of sanitation projects across the country. The approval of both the Interim and Low-Cost Packages for primary and community schools by MESVTEE was also a key achievement, and DFID notes that the adoption of these models has the potential to be 'transformational' if also adopted as the country standard for school sanitation and hygiene.

In terms of leverage for budget allocation, the Sixth National Development Plan 2011-15 already anticipated a progressive rise in the resources for rural water supply and sanitation (as part of the NRWSSP), increasing the budget more than two-fold between 2011 and 2015. However, as DFID points out in the 2015 Annual Review, less than 10% of the funds allocated to MoLGH for sanitation and hygiene were released in 2014, with an average 40% of funds being released to the WASH sector overall (encompassing water resources development, and rural and urban WASH). UNICEF should thus continue its efforts to influence policy at all levels to ensure that GRZ provides sufficient resources for the sustained maintenance and use of sanitation and hand-washing facilities supported by ZSHP, especially once the programme ends in March 2016.

Table 10 below summarizes the main findings of the VFM analysis, listing some of its potential drivers. Priority areas where programme managers could invest additional efforts to observe VFM gains are also identified.

Table 10 Summary findings and potential VFM drivers

VFM indicators	Key findings from VFM analysis	Potential VFM drivers	Priority for PM
CATS			
Economy	According to UNICEF and NGO contracts, unit costs are competitive. A CLTS training per person per day was valued at US \$45 while the cost of a village triggering ranges between US \$81 – \$174. The costs of a household latrine vary widely, but considering just the opportunity cost of labour, its unit cost ranges between US \$5.1 for 2-days work and US \$12.7 for 5-days work.	<ul style="list-style-type: none"> Partnerships with NGOs for facilitation at the district level. Geography, especially soil conditions, and size of villages targeted. Approval and implementation of ODF verification and certification procedures. Strengthening of post-triggering monitoring. Implementation and expansion of M2W systems. Village 'slippage rates' and limited sustainability of adequate hand-washing practices. 	★
Efficiency and cost-efficiency	<p>Both the ODF conversion rate (i.e. proportion of triggered villages that have been verified ODF) and the number of people living in verified ODF villages have increased between 2012 and 2014. However, the growth rate for the latter decreased between 2013Q3 – 2014Q3, and is only recently starting to level-up again.</p> <p>Cost-efficiency has increased for all indicators, with the exception of the unit cost per person reached with hygiene promotion activities due to increased focus on the sustainability of hand-washing practices.</p>		★
Institutional sanitation			
Economy	The cost of a school latrine ranges between US \$424 for the Low-Cost Package and US \$925 for the Interim Package. Training per SLTS facilitator ranges between US \$56 – \$179, while a school triggering costs between US \$41 – \$248.	<ul style="list-style-type: none"> Delays in agreement of school sanitation and hand-washing facilities between MESTVEE and UNICEF. Partnerships with NGOs for facilitation at the district level. Delivery optimisation through different mechanisms: Interim Package, Low-Cost Package and Low-Subsidy Approach. 	★
Efficiency and cost-efficiency	Significant efforts have been made by UNICEF to catch-up with achieving school S&H targets – by February 2015, 153 schools (approx. 76,500 children) were being supported through the Interim Package. This has also been reflected in a significant increase in cost-efficiency during the last half of 2014. However, achievements through the Low-Cost Package have not been taken into account, which may be driving the costs upwards.		★★★

Overall programme			
Effectiveness and cost-effectiveness	<p>There is limited information for sustained outcomes, but estimates for December 2013 suggest that 25% of the targeted population was using improved sanitation and hand-washing facilities.</p> <p>Based on cumulative actuals up to December 2013, the total programme unit cost per user was estimated at US \$4.10.</p>	<ul style="list-style-type: none"> Partnerships with NGOs for facilitation at the district level and use of a Sector Wide Approach. Cost optimisation through competitive prices offered by NGOs and different packages for delivery of school S&H. Strengthened monitoring through M2W. Identification of components that need strengthening throughout the programme's lifetime, e.g. C4D. 	★ ★

★ ★ ★ **High priority** – additional focus on measuring and improving VFM could yield substantial gains

★ ★ **Medium priority** – measuring and improving VFM yields marginal impact

★ **Low priority** – VFM is already satisfactory

5.2 Limitations

Although UNICEF has consistently reported expenditures (including disaggregation between commitments and actuals) and has improved monitoring and tracking of outputs and outcomes, several assumptions had to be made in order to carry out this VFM analysis. Based on current financial reports, it is not possible to unequivocally allocate funds spent on specific outputs or outcomes, nor is it possible to differentiate between hardware, software and programme support costs for each activity. Although NGO liquidations, contract deliveries and direct cash transfers to districts are monitored, this information is not consolidated in a timely and structured manner. Similarly, these data are not disaggregated by districts or by type of costs either, limiting the accuracy and scope of this and future VFM analyses.

In light of all the above (and all other limitations identified throughout this report), we recommend the actions below to improve future VFM analyses. Overall, although data for the ZSHP are available, information is largely spread out both across different record-keeping mechanisms and documentation, and sector stakeholders. For VFM analyses to be carried out on a routine basis as to directly benefit programme implementation, information needs to be consolidated and structured to facilitate the analysis. This will allow for an easy assessment of programme performance at different points, and ultimately ensure that outputs and outcomes are being maximised in a context of limited resources, i.e. that the programme truly represents value for money at all times.

5.3 Suggestions to improve VFM analysis

Indicators should be clearly defined for all outputs, assumed outcomes and sustain outcomes (as defined in the VFM methodology), and should all be summarised in UNICEF Progress Reports

Although UNICEF financial reports consistently report on assumed outcomes, there is generally very limited data for outputs, i.e. number of villages triggered, number of trainings performed, etc. Outputs are reported by NGOs as part of their contract requirements, but this information is not consolidated in a structured manner, with different NGOs reporting different indicators. Despite the existence of M2W data that tracks usage of sanitation facilities, reported sustained outcome information is also limited.

UNICEF Financial Reports should summarise liquidation amounts, differentiate between types of costs, and estimate the distribution of programme support costs between activities

Given that liquidations or disbursements are the funds that can actually be linked with outputs and outcomes achieved, these figures should also be reported in a timely manner. Current expenditure reports, which encompass both commitments and actuals, are misleading when tracking trends across time and for the purposes of a VFM analysis.

Liquidations should also disaggregate between hardware, software and programme support costs. In particular, staff costs should be allocated to different activities to allow for a more accurate distribution of programme support costs. Estimation for staff costs could be based on staff timesheets or programme budgets.

M2W monitoring data should be used to track sustainability of outputs

M2W collects indicators for S&H facilities usage, which could be systematically tracked and reported in UNICEF Progress Reports. Wide use of M2W data will also help to advocate for the maintenance of this monitoring system once the programme ends in 2016.

Financial and results tracking for school S&H should distinguish between the Interim and the Low-Cost Packages

Even though progress for the delivery of both the Interim and Low-Cost Packages is documented in recent UNICEF Progress Reports, it is not clear how many schools have been finalised and how many children are benefiting through each of these schemes.

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