

Agenda for Change Systems Strengthening Research WaterSHED Case Study

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EXECUTIVE SUMMARY

The Agenda for Change Global Hub supports its members to deliver systems change and document and share their experiences in the water, sanitation, and hygiene (WASH) sectors. As part of that overall effort, the Hub contracted a team from the Springfield Centre and Aguaconsult to test an approach to assessing systems change by applying it to three WASH cases. This case tests the approach by applying it to WaterSHED's work on improving sanitation service delivery to rural households in Cambodia.

Approach

Programmes that try to facilitate systems change do not intervene directly to improve service delivery levels – for example, by digging wells or building toilets. Instead, they focus on addressing the underlying issues that have prevented the system from working well. The idea is that if the performance of key system factors – things like finance, monitoring, coordination, and information – can be improved, it will lead to improvements in WASH service delivery levels.

There are two ways of improving the performance of key system factors. One is a programme doing something themselves to directly improve the performance of a factor, whilst the other is trying to get permanent public, private, and civil society system actors to change their behaviours to enable better factor performance. To achieve more sustainable change, most system change programmes take the latter approach. In effect, this leads to a chain reaction of performance and behaviour changes: a programme's support leads permanent system actors to change their behaviour, which improves the performance of key system factors, which in turn triggers further behaviour changes, which improves service delivery.

The approach being tested addresses five key questions which together tell the story of how effective systems change programmes' work has been. It captures the **depth** of key system changes by assessing how *much* performance has changed (both in key system factors, and at service delivery level). It captures the **sustainability** and **scale** of system changes by assessing the ownership, scale and resilience of the behaviour changes that drove performance changes. It assesses **attribution** by examining the relationships between changes, and by looking at what else might have caused changes that occurred.

- **Changes:** what has changed?
- **Depth:** how much have things changed?
- **Scale:** how widespread are changes?
- **Sustainability:** how sustainable are changes?
- **Attribution:** why did changes happen? Did the programme credibly contribute to the changes? What else in the system contributed to changes?

Box 1: the five questions used to assess systemic change

Findings

WaterSHED's focus was on improving two key system factors, namely **targeting** (a better and more affordable latrine package and purchasing process, geared to rural households' needs and aspirations), and **information** (more persuasive and accessible information for rural consumers about the benefits of improved sanitation, and about where to purchase toilets and how to install them). WaterSHED's theory was that the combined effect of better demand generation, through improved information, and better demand fulfilment, through improved targeting, would lead more rural consumers to purchase toilets, and hence improve sanitation coverage.

Initially, WaterSHED worked with private sanitation enterprises to improve both targeting and information. WaterSHED invested in early research and development in partnership with other

agencies, including iDE, Lien Aid and World Toilet Organisation, to develop a more affordable 'core' latrine package, which WaterSHED shared with enterprises. They also supported enterprises with information about rural consumers and technical and business management skills through training, coaching, and technical advice, and engaged local leaders as sanitation sales agents, trained them, and linked these sales agents to enterprises.

As a result of this support, enterprises in rural areas began producing and selling all the component parts needed for a latrine as a single "latrine core" package that could be delivered to customers' homes, and self-installed. Enterprises also contracted sales agents trained by WaterSHED on a commission basis, to conduct door-to-door direct marketing and run village-based sales events promoting their products. These behaviour changes in sanitation enterprises led to two key performance changes. Firstly, the new latrine package drastically increased the convenience and reduced the cost of purchasing and constructing a relatively 'high-end' toilet for rural households. Secondly, through village product displays and personal visits from sales agents, households could now easily access accurate and relevant information about toilets and purchasing options.

The *ownership* and *scale* of enterprises producing and selling the latrine core package – the behaviour change that improved targeting – were very good. Evidence for *resilience* was less rich, but it seems likely that enterprises themselves are more resilient than they were before WaterSHED's support. The behaviour change that improved information – enterprises promoting and selling toilets through sales agents – also reached good *scale*. However, *ownership* and *resilience* were not strong. Enterprises struggled to recruit, train, and manage a rural salesforce, and relied heavily on WaterSHED staff to do their marketing.

WaterSHED recognised this threat to sustainability and realised that to mitigate it, they would need to take a different approach to improving the information available in the system. The team had observed that the districts with the best latrine sales had a commune or village leader who was motivated to promote improved sanitation. About three years after it first started piloting interventions, WaterSHED decided to pivot to a new focus on improving commune leadership development, hoping they could leverage this pattern to improve sanitation.

To do this, WaterSHED developed a leadership training programme called Civic Champions. The training aimed to provide commune leaders with the tools, strategies, and skills needed to promote local development in their communes. Unusually for public leadership development programmes in Cambodia, participants had to pay for a place, learned by doing, and were assessed by the outcomes they achieved. Change in sanitation uptake was used as the proxy measurement for gauging the change in participants' leadership skills. WaterSHED ran the programme jointly with district government staff who they trained to act as facilitators and coaches. The availability of a better training programme and, to some extent, improved training skills among the facilitators, led government staff to gradually take on greater ownership of the Civic Champions programme with each iteration, eventually running an entirely government-led iteration seven years after WaterSHED's initial pilot.

Numerous pieces of research found that the Civic Champions programme led to improved leadership skills among participants. For example, perseverance, levels of cooperation across party-lines, and confidence improved following participation in Civic Champions. The *depth* of change in leadership development is significant. There are also strong early signs of *ownership* and of *scale* albeit these are

preliminary at this stage. The National Department of Training is currently leading the Civic Champions programme in seven of the eight provinces in the programme area, is testing online rollout of the training, and is planning, subject to the results of the current iteration, to integrate Civic Champions into the National School of Local Administration and roll it out nationwide. A potential threat to *resilience* is an identified skills gap in facilitators, though this is somewhat mitigated by the government contracting experienced WaterSHED core team members to support them with technical advice and ensuring quality.

Civic Champions' successes in leadership development led, as it was hoped they would, to commune leaders providing improved sanitation information to rural households in their communes. This new approach to ensuring rural households had access to better information about toilets proved successful, relative to providing that information through sales agents. Information from public leaders is generally more trusted as it is seen as less biased than information from sales agents, and it proved to be more sustainable and scalable too. As of September 2020, over 90% of commune councillors in the programme area had participated in the Civic Champions programme, and although not all of them provide information about toilets to rural households, most likely do. This is remarkable *scale*. It is too early to assess *ownership* well, but Civic Champions demonstrated good ownership of sanitation promotion strategies during the training, and sales in Civic Champions' communes remained elevated for at least a year after the training programme finished.¹ The *resilience* of this behaviour change depends primarily on whether the national government runs the Civic Champions training programme sustainably.

In line with WaterSHED's theory of change, Civic Champions' provision of improved **information** (thanks to improved **leadership development**) and better product **targeting** by enterprises have jointly led to the desired behaviour change at the service delivery level: more rural households buy toilets. This has happened at *scale* – arguably WaterSHED's work more than doubled the number of toilets that would have been sold without any intervention²– and signs of *ownership* are also strong. *Resilience* depends on the sustainability of changes in leadership development, information and targeting, among other factors. The key performance change at service delivery level is simply more toilets being sold (improved sanitation coverage) at a better price, albeit with variations. WaterSHED data shows that sanitation coverage increased from 29% to 77% from 2011 to 2020 in the programme area.³ Whilst other factors likely contributed to this remarkable increase, numerous independent evaluations concluded that the changes WaterSHED facilitated drove an accelerated rate of latrine uptake, over and above what would have happened without intervention.

WaterSHED's role, then, was not to drive change but to address the underlying issues that had previously prevented other local actors from driving change, thereby facilitating them to do so. This meant WaterSHED focused its resources on identifying and supporting actors to change their behaviour, rather than on providing solutions directly.

WaterSHED has demonstrated that prioritising sustainability need not come at the cost of impact. The *depth* of performance changes achieved in leadership development, targeting and information, and ultimately in latrine affordability and sales, is remarkable. Just as importantly, sustainability and scale have also been achieved. Despite the potential risks to resilience, overall WaterSHED's system strengthening efforts have clearly contributed to dramatically improved sanitation coverage in a way that is scaled and likely sustainable.

Reflections on the learning approach

This approach to understanding system strengthening enabled us to map the links clearly, systematically, and comprehensively between WaterSHED's system strengthening efforts and improved service delivery outcomes. Doing so in a detailed way led to new insights on where WaterSHED's efforts had contributed to deep, sustainable, and scaled changes in the system, as well as where vulnerabilities – or simply information gaps – are. However, this is not a 'quick and easy' approach; it requires a strong understanding of an organisation's work and of key concepts in systems thinking. Using the approach to assess two other cases will provide a more rounded picture of how valuable it is likely to be as a monitoring and adaptive management tool.

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1. INTRODUCTION

The Agenda for Change Global Hub supports its members to deliver systems change and document and share their experiences in the water, sanitation, and hygiene (WASH) sectors. As part of that overall effort, the Hub contracted a team from the Springfield Centre and Aguaconsult to test an approach to assessing systems change by applying it to two member organizations' work – WaterSHED and Water For People - and to the RANO WASH consortiums' work in Madagascar.

The approach being tested has been adapted from practices applied in other sectors measuring systems change.⁴ The analysis includes an assessment of system changes over time including what has changed, looking at 'actor behaviour changes' and 'factor performance changes,' and why changes have occurred, looking at the links between programme activities, external influences, actors, factors, and service delivery levels. It also assesses the depth, scale, and likely sustainability of changes. This is the first of three case studies which documents and communicates the contributions WaterSHED has made towards system change in the sanitation market system in Cambodia. The sanitation market system is defined as the retail of improved latrines to rural households in eight Cambodian provinces, which for the purpose of this case study, we take to be the system boundary.

The objective of the assignment is to assess how useful the approach is for analysing a programme's contributions to WASH system changes, by showing the links between its system strengthening efforts and improvements in service delivery levels. A further piece of work will synthesize lessons learned across the three test cases and provide pragmatic guidance for Agenda for Change members on how to use the approach in their own programmes, based on what has been learned.

1.1. WaterSHED

[WaterSHED](#) was an NGO that built markets to improve the WASH practices of rural households across Cambodia, in support of the Sustainable Development Goals and the Government of Cambodia's targets. WaterSHED's work in sanitation began in partnership with consortium partners Lien Aid and World Toilet Organization as the Water, Sanitation and Hygiene Marketing Project and later became known as the *Hands-Off* market-based sanitation (MBS) programme, managed entirely by WaterSHED.

WaterSHED was a relatively small Cambodian NGO that was funded by various foundations, donors, and companies who had a vision for systems strengthening work in WASH.¹ It had an annual budget of between one and two million USD and a staff team of 25 in its last year. It was initially started as a program at the University of North Carolina (UNC) at Chapel Hill, and it maintained an ongoing relationship with UNC. Over the years, an unusually large number of pieces of research and evaluation were done on WaterSHED's work, in part because of this relationship.

The *Hands-Off* programme was designed to improve sanitation in rural Cambodia through sustainable, systems strengthening efforts. Specifically, *Hands Off* was underpinned by two key principles: that households should be considered consumers rather than beneficiaries of charity,⁵ and that the program be geared towards building a market that functions independently of aid;⁶ in other words: "the ultimate aim of *Hands-Off* MBS is for WaterSHED's role to become obsolete."⁷ In 2021,

¹ See <https://www.watershedasia.org/our-partners/> for a list of WaterSHED's partners.

WaterSHED achieved this aim and has strategically exited from the market. In getting to this point, WaterSHED's *Hands Off* programme has evolved through three phases.ⁱⁱ

Phase 1. Start-up – design and piloting (2009-2011)

In 2009, WaterSHED conducted baseline and market research in its pilot areas - 537 villages in four districts in Kampong Speu Province (with a total estimated population of 295,000⁸). This was used to develop interventions, which started in Kampong Speu in June 2010. Phase 1 interventions were focused on product design, and on supporting enterprises to market toilets to rural households. During this period, WaterSHED, under the guidance of the Cambodian Ministry of Rural Development, also designed a series of open-source marketing tools for a 'Stop the Diarrhoea' campaign.

Phase 2. Expansion, maturation, and consolidation (2012-2017)

WaterSHED's second phase expanded the market facilitation activities that had been piloted in Kampong Speu to seven other provinces, reaching a total of 54 districts across eight provinces (with a total estimated population of about 6,069,000ⁱⁱⁱ) by 2014. In 2013, WaterSHED piloted the Civic Champions programme in Kampong Speu, scaling-it up across all eight provinces in 2015-2016 and running further iterations from 2017 onwards.⁹

During this phase, WaterSHED also worked with microfinance institutions and enterprises to develop toilet loans for rural households, supported enterprises to adopt appropriate mobile and ICT tools to increase efficiencies in operations, implemented a training, coaching, and mentoring network for rural Cambodian women, campaigned for enterprises to recruit and retain female sales agents, and invested in product design for a flat-pack affordable latrine shelter.

Phase 3. Sustainability (2018-2021)^{iv}

Following its exit from district-based facilitation activities, WaterSHED began to focus on institutionalising its successes in the systems it was working within, in preparation for their complete strategic exit in 2021. Key activities in this phase included expanding the women's professional network that had been piloted in Phase 2, supporting the continued growth of the social businesses leading product development and preparing to sell its stake in them, and institutionalising the Civic Champions programme within the national government.

Focus for this case study

WaterSHED's work during these three phases spanned a wide range of activities; however, this case study will focus on assessing the system changes achieved through two key programmes: the Sanitation Marketing activities (also known as SanMark), and the Civic Champions leadership training programme. These two programmes were chosen as the focus because an initial assessment of WaterSHED's work suggested that much of the system changes WaterSHED contributed to catalysing resulted from one or both of these programmes. Systems are complex and evolve because of the interaction of changes across many actors and factors. Nonetheless, changes in some factors and by some actors are more significant than others (for instance because they are more widely adopted, or more sustainably adopted, or because they have a greater influence on other parts of the system).

ⁱⁱ For further detail on the three phases, see M. W. Jenkins, L. McLennan, G. Revell, and A. Salinger, (2019), 'Strengthening the sanitation market system: WaterSHED's Hands-Off experience', March, 1–12.

ⁱⁱⁱ Based on WaterSHED's data from 2015.

^{iv} The initial plan was to finish this phase in 2020 but WaterSHED extended by six months due to the impacts of the COVID19 pandemic.

These two programmes yielded more significant changes than WaterSHED's other activities, in systems change terms. They are also the ones about which the most information is available.

1.2. Approach

Foundational concepts

The approach that will be tested analyses system changes across two types of changes:

- **Behaviour changes:** changes to who does what, and how they do it.
- **Performance changes:** changes to the quality, quantity, price, productivity, timing, or inclusivity of the resources needed for the system to work well. Here, resources are defined broadly to include things like information, relationships, and skills as well as more tangible resources like products, assets, and finance. Thus, a performance improvement means that whatever is provided is *better* in some measurable way.^v

For the sake of analysis, behaviour changes and performance changes can be grouped according to the WASH system factors they relate to. For example, a performance change in the WASH system factor of *monitoring sanitation coverage* might be that better quality data is available in a timelier fashion. A behaviour change in the same factor might be that a government agency starts conducting annual sanitation coverage surveys, run by appropriately trained staff members.

Behaviour changes and performance changes are related: behaviour changes are desirable because they can result in performance changes. For instance, an Agenda for Change member organisation might support government to conduct better and more regular surveys of sanitation coverage precisely *because* it will result in better quality, more timely data – something that is needed for the system to work well. It may take several behaviour changes (in one or several factors) to cause one performance change, and similarly one behaviour change might cause or contribute to several performance changes (in one or several factors).

Performance changes may also be caused by an NGO doing something in a system themselves. For instance, an NGO could conduct monitoring themselves, and this too would lead to better quality, more timely data. However, such a change would not be sustainable, as an NGO would not be expected (or, likely, funded) to perform such roles indefinitely. A performance change will be sustainable if the behaviour or behaviours that caused it are sustainable and will be scaled if the behaviour or behaviours that caused it are scaled. It's therefore important to assess the sustainability and scale of behaviour changes. This can be done by considering the following three important characteristics:

- a. **Ownership:** to what extent is the behaviour change owned independently by the actor or actors in the system?
- b. **Scale:** to what extent has the innovation/new behaviour been scaled across the system? How many actors are doing it or at what scale are actors doing it?

^v Note that changes to services levels are performance changes, as are changes to other resources provided by the system. For example, a change in the quality or affordability of latrines is a performance change; so too is a change in timeliness of monitoring data, affordability of finance or quality of planning information.

- c. **Resilience:** to what extent does the wider system resource and reinforce the new behaviour? Is there evidence to suggest the change will be resilient to shocks, threats, and stressors?

There is a chain reaction between behaviour changes and performance changes i.e., behaviour changes can cause performance changes which can, in turn, trigger other behaviour changes (see Figure 3 for an illustration of this). This means that whilst the short-to-medium term sustainability of performance changes is dependent on the ownership, scale, and resilience of the behaviour changes that caused it, their longer-term sustainability and resilience is dependent on the ownership, scale, and resilience of behaviour changes further down the chain.

These concepts are foundational for assessing and communicating systems change, which involves collecting and communicating information about:

- **What** has changed in the way the system works (what behaviour changes, what performance changes?), including:
 - the **depth** of changes (how much has performance changed?)
 - the **scale** of changes (how widespread are performance and behaviour changes?)
 - the **sustainability** of changes (how sustainable are behaviour changes, and what does this mean for the performance changes they cause?)
- **Why** the system has changed (what has caused behaviour changes and performances changes to occur? What is the link between behaviour changes and performance changes?), including:
 - evidence that supports or undermines the member organisation’s theory of change (did system changes likely happen because of the member’s programme activities?)
 - an assessment of other causes, beyond the member organisation’s work (what else might have caused or contributed to identified changes?)

Applying the concepts to Agenda for Change member organisations’ work

While member organizations’ implementation approaches vary, broadly speaking they all undertake **activities** to instigate changes in key **WASH system factors** (such as monitoring, policy and legislation enforcement, finance, planning, etc.). These changes may be actor behaviour changes, factor performance changes, or ideally, both. In turn these positive changes to WASH system factors are intended to effect changes in **WASH service delivery levels**, leading to improved health and livelihood outcomes. This high-level theory of change is visualized in Figure 1.

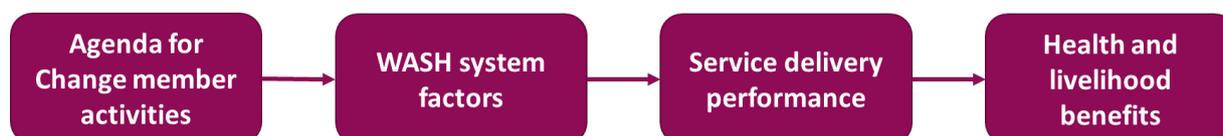


Figure 1: Agenda for Change members’ theory of change, implicit in system strengthening efforts

Figure 2 provides a summary research framework which identifies what needs to be assessed at each level of the theory of change based on the questions outlined above. Note that this assignment will only go to the service delivery level, so health and livelihood benefits are not included.

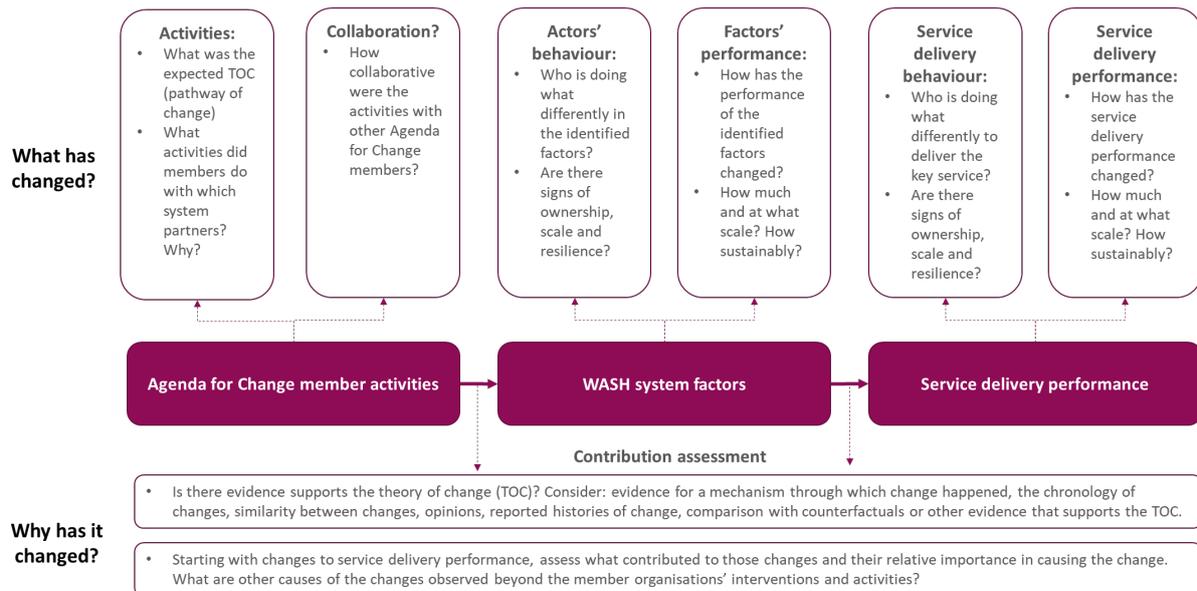


Figure 2: Research framework

The analysis done in this case study has been entirely based on existing research done by or about WaterSHED. Realistically, very few organizations and programs will have robust (qualitative and quantitative) information relating to all the questions in this framework nor will every category of information be equally relevant or important in every context. However, this framework allows organizations to assess where there are information gaps, how important they are, and how feasible it is to fill them.

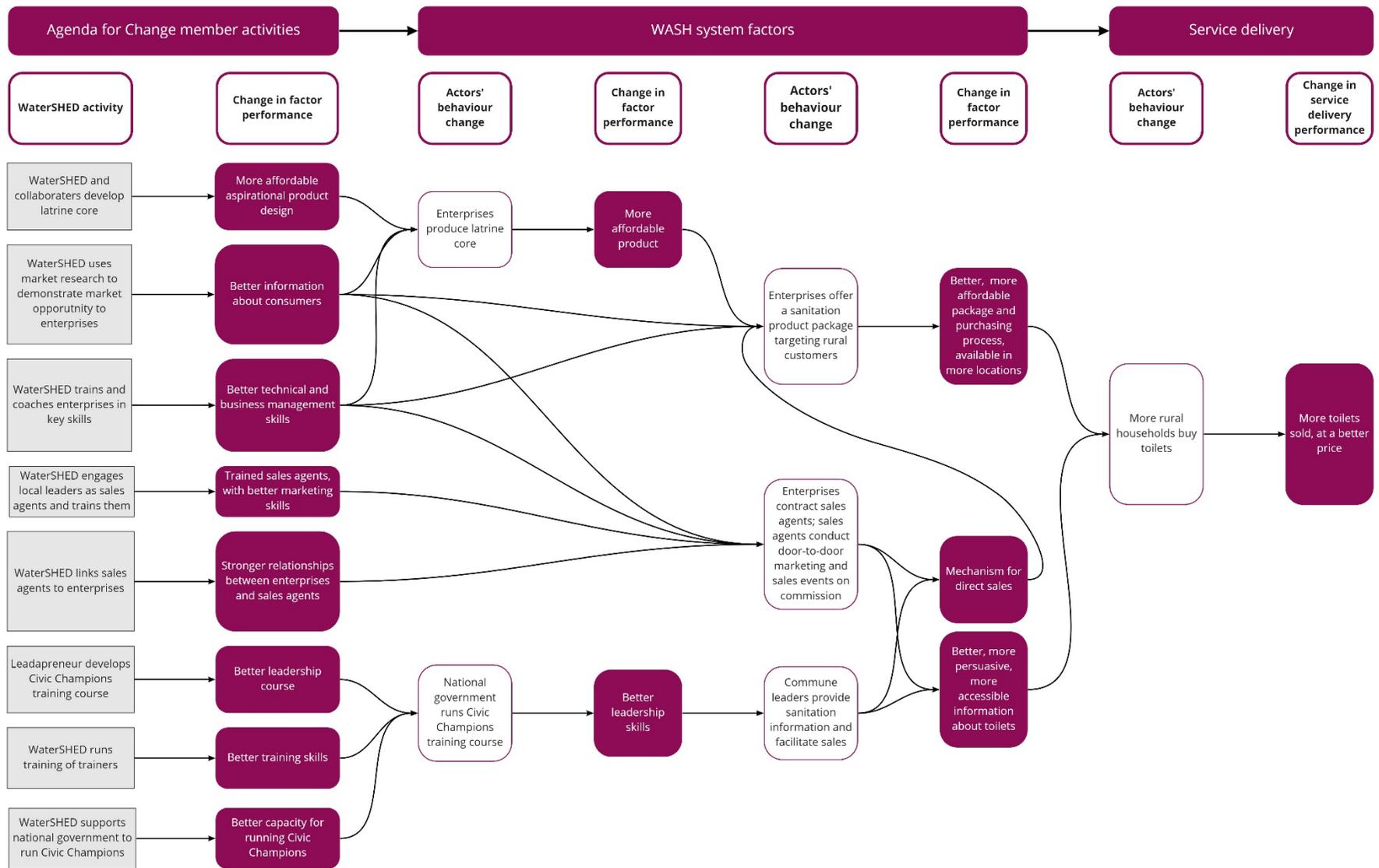
Figure 3, below, shows the theory of change for the streams of WaterSHED's work in sanitation that are included in this assessment, showing the links between behaviour changes and performance changes at the activities, factors, and service delivery levels.

This case study starts by explaining how the sanitation market system was working prior to WaterSHED's involvement, including information about who was doing what in the market system (behaviour) and what the effects of that were (performance). The case study then goes on to examine the two focal streams of work – Sanitation Marketing and Civic Champions – in detail. In each of these sections, we present what WaterSHED did, what behaviour and performance changes this led to in WASH system factors, and how sustainable and scaled the changes were, based on an assessment of the scale, ownership, and resilience of key behaviour changes. The last section explores what has changed (i.e., how things are now), how sustainable and scaled changes are, and why things have changed, based on the available evidence.

For the sake of clarity, performance changes are pulled out from the main narrative in light blue boxes which describe what changed and how much it changed, and analyses of ownership, scale and resilience are detailed in light green boxes, pointing to scale and sustainability. When assessing ownership, scale, and resilience we use traffic lights, as follows:

Scale	Red	Little or no evidence of innovation spreading beyond pilot area
	Orange	Little or no evidence of innovation spreading to the full programme area
	Green	Good evidence of innovation being adopted across the programme area

Ownership	Red	Insufficient evidence of actor demonstrating capacity and will to continue behaviour change
	Orange	Some evidence of actor demonstrating capacity and will to continue behaviour change
	Green	Good evidence of actor demonstrating capacity and will to continue behaviour change
Resilience	Red	Insufficient evidence of the system adapting or having the capability to provide the resources needed to sustain the innovation
	Orange	Some evidence of the system adapting or having the capability to provide the resources needed to sustain the innovation
	Green	Good evidence of the system adapting or having the capability to provide the resources needed to sustain the innovation



2. HOW THINGS WERE WORKING WHEN WATERSHED STARTED

WaterSHED started interventions in its pilot area – four districts in Kampong Speu Province – in June 2010, expanding work to other provinces in the programme area in January 2012.¹⁰ Consequently, there is detailed information about how the sanitation market system was working prior to intervention in Kampong Speu in 2009, which is supplemented by baseline information about sanitation coverage from a survey across all seven of the eight provinces in the programme area from 2011.

In 2009, just under 28% of the households in the pilot area in Kampong Speu owned a functioning household latrine. Coverage varied widely between villages, from two villages with 0% coverage to four villages with 70%-85% coverage, with distance to main towns, roads, and markets correlating with higher latrine coverage.¹¹ Population density, environmental conditions, economic status, and the presence of non-agricultural sources of incomes in villages also correlated with latrine coverage to some extent. In 2011, the average coverage rate across the seven provinces surveyed in the scale-up area was very similar - 29% on average, with a lot of variation both within and between provinces, from 19% coverage in Pursat Province to 44% coverage in Battambang Province.¹²

Based on census data from 1998 and 2008, the average increase in sanitation coverage in Kampong Speu prior to intervention was estimated to be 1.36 percentage points per year.¹³ A more reliable assessment of sanitation coverage trends was made in twelve rural villages in Kandal and Svay Rieng Provinces between 2006 and 2009.¹⁴ The very similar resulting background sanitation coverage rate of 1.3% per year also matches with the rate of sanitation coverage increase in rural Cambodia more generally from 2005 to 2015,¹⁵ and can be assumed to apply to the programme area as well, given its similarity to estimated rates of increase in Kampong Speu, and in the absence of more specifically relevant data.¹⁶

Awareness of sanitation messages was found to be low amongst both latrine owners and non-owners at the time. Only about 37% of all respondents had heard hygiene advice about using a latrine.¹⁷ Despite this, assessments found that there was a strong latent demand for latrines among rural Cambodians,¹⁸ driven by a variety of motivations including personal convenience, safety and privacy, social pressures, and health concerns.¹⁹ In 2009, 85.5% of non-latrine owners in Kampong Speu said that they had discussed or thought about building a household latrine.²⁰

A strong *preference* for latrine adoption, was not, however, being converted to high sanitation coverage rates because most rural households preferred to save for an 'ideal' pour-flush style toilet, continuing open-defecation practices in the meantime, than to install a more affordable but less appealing dry pit latrine.²¹ 97.6% of non-latrine owning respondents to the 2009 baseline survey stated a preference for a flush or pour-flush latrine over any other option, including open defecation or other latrine technologies. This preference was reflected in actual purchasing behaviour - 79% of functioning latrines in the Kampong Speu pilot area were pour-flush latrines.

In 2009, low-cost flush or pour-flush toilet designs did not yet exist in the market.²² The vast majority of latrine-owning households purchased directly from local private sector providers, but pour-flush latrines were not available as a single package. Instead, households had to buy the different component parts – typically from three or more retailers – and then assemble the components themselves at home, often hiring a mason to construct the latrine and superstructure.²³ Prices varied

considerably, but a supply chain analysis done in Kampong Speu Province in 2009²⁴ found an average estimated materials cost of 1,470,850 KHR and labour cost of 601,750 KHR according to masons, equivalent to a total market price of 619.94 USD for an installed latrine in 2014.²⁵ Masons tend to be employed at the higher end of the market, and household estimates of latrine costs were considerably lower, but still expensive for most rural Cambodians.^{vi} Consequently, the journey from preference to intention to adoption was slow. Whilst 68% of non-adopters in Kampong Speu had chosen a site for their future latrine, only 24% had identified a mason who could construct it and only 8% had money saved towards a latrine purchase.²⁶

Meanwhile, despite growing demand for latrines, there were not any enterprises that specialised in latrine sales or installation. The project's 2009 supply chain analysis found that sanitation-related products made up 5-10% of large building material suppliers' business, 20-50% of smaller building material suppliers' business, 40-60% of concrete producers' business, and 10-40% of masons' business.²⁷ The latrine market was perceived to be simply too small for enterprises to make it their primary focus. There was poor information flow along the supply chain, and enterprises did not invest in market research about their potential sanitation customers.²⁸

Enterprises also had a very passive approach to selling latrines. In fact, none of the supply chain actors in Kampong Speu promoted sanitation products and some were quite resistant to doing so, believing it would bear little return on investment and that it might make them look like business was doing poorly.²⁹ Consequently, the onus was entirely on households to find out what options were available and from which retailers, identify a list of needed materials, and ascertain prices. Neighbours, relatives, NGO staff, the village chief, and community meetings were cited as the primary sources of information about latrine technology, construction, and purchase.³⁰ Masons often played an advisory role, especially at the higher end of the market,³¹ but were not considered as trustworthy as NGO workers and government officials.³²

3. SANITATION MARKETING

3.1. Activities

In 2009, WaterSHED conducted in-depth supply-side and demand-side research in its pilot area – 537 villages in four districts in Kampong Speu Province. This was used to develop interventions, which started in Kampong Speu in June 2010. In the early stages of intervention (2009-2012) WaterSHED focused on five key activities:

1. Designing an affordable, aspirational pour-flush latrine, in collaboration with other agencies;
2. Using their market research to demonstrate the market opportunity to enterprises;
3. Providing enterprises support and mentoring to develop an appropriate product offer for rural customers, to manage stock and improve production efficiencies, and to persuade them of the value of investing in marketing and promotion to rural households;
4. Training community-based sales agents to run sales events, make door-to-door sales, and connect customers with enterprises; and

^{vi} The average estimate of the cost of high end latrines was \$371 among non-owners and \$361 among owners in 2009 in Kampong Speu, and the average estimate of what households actually spent on a pour-flush latrine was \$303. D. Pedi and P. Touch, (2009), 'WASH Marketing Project, Kampong Speu Baseline Survey', February, 1–127.

5. Facilitating contracts between community-based sales agents and enterprises.

For the activities that involved working with enterprises, WaterSHED's approach was to identify and provide support to existing businesses who were already supplying products for latrine construction, in small numbers, or who were prepared to include latrines as part of their business activities.³³

WaterSHED worked with most of the enterprises that wanted to be engaged. The goal was not to create new latrine-specific enterprises, but rather to engage with existing businesses that offered a range of products and services of which latrine component were a part. (Some latrine-specific enterprises did start up as demand for latrines grew, and WaterSHED was happy to engage with them too.) Community-based sales agents were identified by WaterSHED Facilitation Specialists based in each district.³⁴

WaterSHED's activities led to a series of performance improvements – in other words, they provided enterprises with better resources than what had previously been available in the system, namely:

- A design for a more affordable product that could be produced locally;
- Better information about consumers;
- Better technical and business management skills;
- Trained community-based sales agents; and
- Introductions to these trained community-based sales agents.

Product design for a more affordable product

The new pour-flush latrine product WaterSHED and its collaborating partners designed consists of a ceramic pan cast into a platform made of brick and cement (typically tiled), a chamber box, a PVC connector pipe, three pre-cast concrete rings, and a pit lid. These component parts were designed to be sold as a single package that can be self-installed, thereby reducing labour costs for customers. Households who purchase the package – known as the “latrine core” – can then choose to install a cheaper wooden or thatch superstructure, or to invest in a more expensive galvanised steel, concrete, or brick superstructure.³⁵ Enterprises could produce this product package for about 43 USD.^{vii}

Better information about consumers

The baseline market research WaterSHED conducted provided enterprises with rich information about potential customers in rural areas. It demonstrated the large latent demand for latrines among rural households that enterprises could capitalize on, and helped enterprises understand how potential customers were getting information about toilets. It also equipped enterprises with important information about affordability, consumer preferences, consumer experiences of latrine purchase and construction, which enterprises needed to be convinced of the market opportunity, and to capitalise on it by developing an attractive and appropriately priced product.

Better technical and business management skills

Enterprises that worked with WaterSHED were provided with a range of technical and professional skills through training and mentoring. These included technical skills to help them

^{vii} Based on The SP Latrine Materials Cost Survey (2016), cited in Robertson (2019). It is likely the product could be produced for less when it was first introduced in 2009/2010.

improve efficiencies in the latrine production process, and business management skills relating to bookkeeping and inventory management.³⁶ Enterprises were also supported with advice on creating and pricing a package for rural consumers (price to include home delivery, aim to achieve greater profit through lower margins and higher volumes). Critically, through training and coaching, enterprises were persuaded to trial selling their toilets through community-based sales agents.³⁷

Trained sales agents

Community-based sales agents were trained to promote toilets sold by local sanitation enterprises to rural households, using village meetings, door-to-door sales techniques, and WaterSHED-supplied marketing materials.³⁸ Sales agents were provided with information about key motivators for toilet purchase, such as status, pride, convenience, and cost-saving, and taught how to use these to promote toilets.³⁹

Stronger relationships between enterprises and sales agents

Enterprises were introduced to sales agents who could independently market their products and were supported to contract them on commission. Businesses set their own commission – on average 2.50 USD per sale, about 3.5% of the total revenue from a sale and about 20% of the profits per sale.⁴⁰ Sales agents were provided with all the necessary information about product options, pricing, delivery, and commission fees.

3.2. Factor behaviour and performance changes

The combination of these performance improvements enabled enterprises to make a series of key behaviour changes, in **production**, **information**, and **targeting** (developing a better and more affordable product offer):

- **Production:** convinced by the information they now had about the potential market for latrines in rural communes, and persuaded by the merits of the new product design, *enterprises started producing components for the latrine core themselves.*
- **Information:** a combination of better information about consumers' needs and better business management skills was sufficient to persuade enterprises to try selling their products through community-based sales agents. *Enterprises contracted sales agents trained by WaterSHED on a commission basis, to conduct door-to-door direct marketing and run village-based sales events promoting their products.* According to an evaluation conducted in 2015, in practice, the sales agent was often the village chief or a commune councillor, and each supplier worked with about ten sales agents.⁴¹ When village chiefs or commune councillors served as sales agents, they had a double incentive to promote sanitation – the commission, and the political mandate they had for increasing sanitation coverage.
- **Targeting:** using more affordable, self-produced products, the mechanism for direct sales that sales agents represented, their better skills in product development and pricing, and information about potential consumers from WaterSHED's market research, *enterprises began offering a new sanitation product package and purchasing process targeted to rural households.*

These three behaviour changes jointly led to two key performance changes:^{viii}

1. More persuasive and more accessible information about toilets for rural households;
2. A better and more affordable latrine package, sold through a dramatically improved purchasing process.

More persuasive and more accessible information about toilets

Through 'touch and feel' village product displays and personal visits from informed sales agents, households could now easily access information about toilets and purchasing options through one individual.⁴² This was a vast improvement on having to source information from neighbours, masons, and commune officials who may or may not be well informed, as they had previously done. 93% of people surveyed in 2012 in Kampong Speu and Kampong Cham said that the sales agent was reliable or very reliable and 84.5% said that they were a good or very good source of information and advice.⁴³

Better, more affordable latrine package and purchasing process

Enterprises started selling the latrine core package to rural households through sales agents, who would take orders in customers' homes or at village events. These orders were then passed on to enterprises, who would fulfil them. Home delivery of all the components of the latrine core was included in the package price, as were installation instructions that enabled households to install the toilet without having to hire a mason. This package was fairly standardized across enterprises, and was sold to households at 72.50 USD, including all materials, labour, delivery, and commission fees.^{ix} When the costs of a concrete/brick superstructure are included,^x the average total market price in 2014 was estimated to be 323.63 USD⁴⁴ – a 48% decrease relative to masons' estimates of the previous costs, though similar to baseline costs according to other estimates (estimates varied widely). This package not only reduced the cost of purchasing and constructing a relatively 'high-end' toilet for rural households; it also made it much more convenient and hassle-free compared to what had previously been required. With the new package, a customer only had to make a single phone call to a sales agent to place their order, then follow the instructions to construct the toilet once it had been delivered.⁴⁵ The transition to purchasing through sales agents was rapid; in 2012, only 7% of non-adopters indicated that they would order their latrine from a shop if they decided to purchase one.⁴⁶

^{viii} As Figure 3 shows, a third performance change, in 'production,' was simply that having produced it themselves based on WaterSHED's design, enterprises now had a single, affordable sanitation product package available to sell to consumers. Working with sales agents also yielded a mechanism for direct sales where there previously hadn't been one. This resource contributed to enterprises' ability to develop a new sanitation product package and purchasing process targeting rural households.

^{ix} Data from 2016. The latrine itself had a price point of about 45-50 USD. B. Robertson, (2019), *Estimating the economic benefits of market-based sanitation programs: Model design and application*; P. Dwan and M. Bond, (2016), *Evaluation report: WaterSHED's Hands-Off Sanitation Marketing Program*.

^x 81% of survey respondents in 2012 (Pedi, Sophanna, Sophea, and Jenkins, 2014, 'Rural Consumer Sanitation Adoption Study') reported that they chose a concrete or brick superstructure, like those that were being constructed prior to the introduction of the Latrine Core product, despite cheaper superstructure options being available.

3.3. Scale and sustainability

The **depth** of changes achieved in information and targeting are impressive – both factors were found to be performing much better in assessments done following WaterSHED’s work in product development and marketing than they were before. To understand the extent to which they were systemic changes, it’s important to also assess the **scale** and **sustainability** of these changes by assessing the scale, ownership, and resilience of the behaviour changes that underlie them.

Scale, ownership, and resilience: producing and selling the latrine core package

Enterprises who had been selling component parts for latrine construction started producing and offering the latrine core package in tandem, so the scale, ownership, and resilience of these behaviour changes can be assessed jointly.

Scale:

The key behaviour changes were adopted by at least the 394 enterprises WaterSHED worked with⁴⁷ who collectively serve roughly 40% of the population of Cambodia.⁴⁸ An independent evaluation conducted for WaterSHED in 2015 (at which point, WaterSHED worked with 174 enterprises) also found that during 2011-14, the total number of active sanitation enterprises in programme areas increased by more than 40%, and that, on average, there were 3.3 WaterSHED supported suppliers per district.⁴⁹

Although this was not assessed, it is fair to assume that unsupported enterprises either lowered their prices for conventional latrine components to compete with the new latrine core product or independently combined the components into a single package to compete with WaterSHED supported enterprises. In fact, an assessment based on 2012 data showed that in the pilot area (Kampong Speu) sales from WaterSHED-supported enterprises accounted for only 41.7% of all new pour-flush latrines, suggesting supported enterprises had indeed stimulated other enterprises to start offering low-cost pour-flush latrines to rural households. Furthermore, the 2015 evaluation team spoke to three suppliers who had not been supported by WaterSHED but who reported notably increased sales since WaterSHED started intervening, and that they were now selling latrines for a similar price to enterprises WaterSHED had supported.⁵⁰

Ownership

Assessments from 2015-2016 suggested that enterprises typically made just under 10 USD per sale of a latrine core package, yielding a profit margin of 13.5%.⁵¹ This margin, the enterprises suggested, was sufficient incentive to continue selling latrines, especially as selling high-quality sanitation products also enhanced their reputation.⁵² Ownership of the behaviour changes was tested by WaterSHED themselves through the gradual withdrawal of support in Phase 2. It has now been over three years since WaterSHED withdrew district-based facilitation staff, and according to recent data, suppliers are still selling latrine core and the supplier dropout rate is low.^{xi}

^{xi} Dropout rates were 7.1% in 2018, 13.9% in 2019 and 5.2% in 2020. Over time demand is expected to go down, so a healthy market would expect to see some decline in supply too. Based on its understanding of the market and the literature, WaterSHED’s expected to see rates below 15% until the market was saturated; these rates are low relative to that expectation.

In 2020, an independent assessment of the long-term viability of the sanitation enterprises WaterSHED supported concluded, largely on the basis of three in-depth case studies, that “WaterSHED’s withdrawal...is unlikely to impact the sustainability of these sanitation enterprises.”⁵³ These enterprises had fully adopted the new product and business model for themselves and were evaluated as being largely able to finance and operate their businesses independently, subject to enterprise-level factors (such as intense competition) which might damage a firm’s viability but wouldn’t jeopardise the sustainability of supply for consumers.

However, as adoption rates rise, it will become less profitable for enterprises to continue promoting latrines to the later adopters, who are generally poorer households, or households living in more remote regions.⁵⁴ Indeed, signs of sales slowing down were apparent as early as 2012⁵⁵ and were reported by enterprises in some areas as early as 2015.⁵⁶ But thanks to the fact that sanitation only makes up part of these enterprises’ overall business, suppliers should be able to stay in business even as demand falls. Therefore, as the 2015 evaluation noted, “what is sustained, however, is the capacity to meet market demand at a lower level, accommodating the needs of new households and catering for repairs and latrine replacement.”⁵⁷

Resilience



Behaviour changes in production and targeting came about because of better access to resources that WaterSHED activities made available: better product design, better market research information, a better business model, and better skills. In theory, therefore, if market conditions changed sufficiently that, for instance, an updated product design, or new market research, was needed to continue effectively targeting and supplying rural customers, there would be a need for enterprises to source these resources elsewhere, and it is not clear how they would do this. In practice, however, it is unlikely that this will be needed before the market reaches saturation (given that on average 77% coverage has already been reached in the programme area – see below). Where enterprises will likely need to be creative is in reaching later adopters, where a different approach to sales and outreach may be required.

Enterprises themselves are likely more resilient than they were before WaterSHED’s support. Through their work with WaterSHED, their own networks grew, they expanded their reach into communities, enabling them to market other product offerings to a broader customer base, and they gained more extensive supply chain experience than they previously had. They are, therefore, better placed to innovate and to market innovations to potential customers.

Scale, ownership, and resilience: promoting and selling toilets through sales agents

Scale:



The enterprises that WaterSHED worked with incorporated promotion and sales of latrines through sales agents into their new model, alongside the behaviour changes discussed above. We were not able to source information about how many sales agents WaterSHED identified and trained, but typically it worked out as one sales agent per village.⁵⁸

Ownership



Sales agents themselves were highly motivated; most of those interviewed for the 2015 evaluation said that “the commission was appreciated but not all-important to them” and that “it was also their responsibility (as village leaders) to encourage all households in their villages to have latrines.”⁵⁹ This was partly because many of the sales agents were village chiefs or commune councillors who had a mandate and political incentive to increase sanitation coverage in their communities. They were also socially motivated, as promoting sanitation and increasing sanitation coverage improved their reputation as leaders.

However, some of them also felt that despite the training they had received, they lacked the confidence and/or skills to successfully run sales events and do door-to-door promotion of latrines without WaterSHED staff present. The evaluation found, in part thanks to incentive-based payments to field staff, WaterSHED staff had gradually taken on more and more of what should have been sales agents’ roles.⁶⁰

Fairly early in Phase 2, WaterSHED also observed that enterprises struggled to recruit, train, and manage a rural salesforce, and that the enterprises it worked with were heavily dependent on WaterSHED staff to play this role. The same evaluation found that suppliers “recognised that most of their marketing was actually being undertaken by WaterSHED [Facilitation Specialists] and that while WaterSHED continued to do this, they had no intention to invest in their own marketing.”⁶¹

WaterSHED recognised these issues, pulled back from the sales and marketing roles, and pivoted to a different approach, as explained in the next section.

Resilience



As WaterSHED trained sales agents directly, and facilitated linkages between enterprises and sales agents, there was a threat to resilience when WaterSHED was no longer available to play these roles. Whilst many of the sales agents were elected officials, and the Ministry of Rural Development (MRD) had a mandate to ensure that they were promoting sanitation, WaterSHED recognised that this was not as consistently effective as it needed to be. WaterSHED therefore pivoted to a different approach, as explained in the next section.

4. THE CIVIC CHAMPIONS PROGRAMME

4.1. Activities

Early in the expansion phase, the team noted that some communes showed exceptional results while others did not, and they hypothesised that the difference was due to the behaviour of local commune leaders. The pattern seemed to be that more households bought toilets in districts that had a commune or village leader who was motivated and committed to promoting sanitation.

Meanwhile, the enterprises *Hands Off* had been supporting were also struggling to effectively recruit, train, and manage a rural salesforce without WaterSHED’s support, and some of the sales agents themselves reported that they were not confident enough to fulfil their roles without WaterSHED staff present; thus, the programme needed to find a more sustainable way to generate demand for toilets.

In response, WaterSHED piloted a leadership training programme called Civic Champions in two districts of Kampong Speu in 2013. The training programme was co-developed with Leadapreneur^{xii} and aimed to provide commune leaders with the tools, strategies, and skills needed to be better leaders of local development in their communes. Although the goal for WaterSHED was increased sanitation coverage, the training programme was intentionally geared towards developing leadership potential rather than developing sanitation promotion skills.⁶² The training was designed to build leadership skills in commune councillors who were elected leaders present in every commune, with an official mandate to improve community development, including increasing sanitation coverage.⁶³ The programme was designed to be outcome-oriented: change in sanitation uptake was used as the proxy measurement for gauging the change in participants' leadership skills. The key activities for the pilot were:

- Leadapreneur developing the Civic Champions leadership training programme;
- Leadapreneur training WaterSHED to deliver Civic Champions;
- WaterSHED staff running the Civic Champions training programme; and
- WaterSHED working with government staff to support and monitor the Civic Champions programme, through a Provincial Working Advisory Group.

Following a successful pilot in 2013-2014, WaterSHED ran a scaled-up iteration across all eight provinces in 2015-2016 and a shorter "Light" iteration in 2017, jointly with district government staff as facilitators and coaches.⁶⁴ WaterSHED then redesigned the programme to give provincial government a more significant role in funding and implementing it, and commenced a series of "Hybrid" iterations in 2017.⁶⁵ During these iterations, WaterSHED implemented a "facilitation cascade" for training of trainers. This involved a 'Master Training of Trainers' for WaterSHED's core Civic Champions team, followed by a 'Provincial Training of Trainers' for the Civic Champions facilitators and coaches - two WaterSHED field staff and two district government staff per participating district.⁶⁶

From the inception of the pilot, representatives of the Ministry of Interior (MOI) and the Ministry of Rural Development (MRD) were members of the Civic Champions advisory group. Building on these relationships, and on the initial successes that government staff had observed, in 2018, WaterSHED signed a Memorandum of Understanding with the MOI to work collaboratively on piloting an entirely government-led iteration of the Civic Champions program. The MOI began observing the Hybrid iteration and then in 2019, along with the MRD, worked with WaterSHED to co-design a government-led iteration with the goal of implementing it nationwide.⁶⁷ The first government-led iteration kicked off in February 2020, with WaterSHED running the Master Training of Trainers for MOI and MRD officials. These officials then adapted the curriculum and ran three training sessions for provincial trainers across the country, who in turn will run the Civic Champions programme for commune councillors.⁶⁸ The goal is to integrate Civic Champions into the standard training for administrators and government officials, hosted by the National Department of Training for elected officials, and implemented nationwide.⁶⁹

xii An international leadership development firm, accredited by the London-based Institute of Leadership Management. See www.leadapreneur.com

A key activity across iterations was training district government staff to facilitate Civic Champions and then working closely with national government to institutionalise the Civic Champions programme.^{xiii}

Iteration	Pilot	Scale-up	Light	Hybrid	Government-led
Year	2013-14	2015-16	2017	2018-19	2020-21
Districts	2	16	30	18	66
Communes	20	105	204	144	589
Participants	46	203	375	254	1243
Training cohorts	1	6	30	6	7
Facilitators	WaterSHED	Joint	Joint	Joint	Government

Table 1: Iterations of Civic Champions, adapted from Salinger and Jenkins (2020)

As with their activities in product development and marketing, WaterSHED’s activities led directly to key performance improvements:

- A more participatory leadership development training programme, offered at a higher price; and
- Better and more relevant training skills to facilitate Civic Champions.

A more participatory leadership programme, offered at a higher price

The Civic Champions leadership development programme was different to the leadership training available to commune leaders at that time, including in these key ways:⁷⁰

- **Incentivisation:** typically, leadership training for government staff provided financial incentives for participation, but with Civic Champions participants were invited to apply and, if accepted, had to pay between 15-45 USD (depending on the iteration) to secure their place. They were incentivised to achieve targets through awards and recognition from their peers for good performance. In time, recognition from their commune communities also became an incentive.
- **Training cycles:** Civic Champions did not run as one training ‘course’ but instead ran in three-month cycles of “discover, develop, delivery.” “Discover” referred to a 1–3-day conference that focused on leadership characteristics and skills. “Develop” involved commune teams developing plans for sanitation promotion in their communities, supported by coaching from Civic Champion facilitators and coaches. “Delivery” involved them executing on those plans and monitoring the results in terms of increased sanitation coverage. In general, there were 4 training cycles in one iteration.
- **Learning by doing:** unlike the training commune councillors were used to, Civic Champions were not ‘taught’ in the conventional sense; rather they were encouraged to work together to ‘discover’ answers to the questions posed during training. There were no manuals or textbooks provided to participants; instead, the programme relied on peer-supported, self-driven learning and participants’ own reflection, supported through coaching.

^{xiii} This characterisation of the ‘activities’ is a necessary simplification, as there were numerous components to what WaterSHED did which varied by iteration. For example, one of the ‘Hybrid’ cycles was run by WaterAid with District WASH Committees; for this cycle, WaterSHED provided a consultancy service to support implementation.

- **Outcome-based monitoring:** training was directly linked to tangible development outcomes, particularly in sanitation. Outstanding performance was rewarded with recognition from the provincial governor and cash rewards.

Better training skills

The evaluation of the ‘Scale-up’ iteration of Civic Champions found that district government facilitators’ skills varied greatly, and that despite their training, there was often a skills gap between what was required to deliver Civic Champions and the skills facilitators had.⁷¹ A focus group study of district government facilitators’ perceptions of Civic Champions was done by WaterSHED at the end of the Hybrid iteration, in mid-2019. According to this study, these facilitators felt that their participation in Civic Champions had increased their knowledge and skills in a variety of ways including information-gathering (as a prelude to information dissemination), leadership, and increased confidence in public speaking.⁷² There is little other information to assess whether WaterSHED’s training of trainers improved facilitators’ skills. Conversations with WaterSHED suggest that whilst the training may have led to improvements, the capacity building was insufficient for what was required, as reflected in the Scale-up evaluation.

4.2. Factor behaviour and performance changes

The change in the leadership development training and, to an extent, in government staff’s facilitation skills, enabled the Civic Champions leadership development programme to be run for commune councillors. Initially this was done by WaterSHED, and then by WaterSHED and district government staff, with government staff taking on greater ownership of the Civic Champions programme with each iteration. This gradual behaviour change in **leadership development** has led to better leadership skills among commune leaders – an important performance change in leadership development.

Better leadership skills

Numerous pieces of research were conducted to assess whether the Civic Champions training led to performance improvements in terms of leadership skills. These include opinion-based Before/After comparisons from the Pilot (self-reported),⁷³ Scale-up (self-reported)⁷⁴ and Hybrid (trainer-reported)⁷⁵ iterations, and a quasi-experimental statistical analysis comparing a randomly selected group of participants in the Hybrid iterations’ responses to a series of evaluations, with a randomly selected group of non-participant commune councillors from matched communes’ responses.⁷⁶ These all found that Civic Champions led to better leadership skills.

For example, the Scale-up evaluation found that following participation in Civic Champions, commune councillors reported increased commitment and perseverance in the face of resistance, better cooperation with other commune council members, especially across party and gender lines, greater confidence with public speaking, and a changed perception of what constitutes good leadership, from one rooted in strength, power, and knowledge to one rooted in the ability to build good relationships.⁷⁷ Hybrid participants’ trainers reported similar changes, particularly with regard to confidence, commitment and perseverance.⁷⁸

The quasi-experimental survey found that Hybrid participants had significantly higher scores than their non-Civic counterparts on key leadership skills like leading a team, effective planning, communicating, and teamwork and on confidence in promoting sanitation messages relating to

hygiene, latrines, and faecal sludge management. For the Civic group, increased training attendance was positively correlated with higher leadership capacity. A thematic analysis of phone interviews with ten Civic and ten non-Civic commune leaders showed similarities between the two groups in terms of background and motivation, but differences in terms of how they fulfil their duties. The Civic leaders mentioned working with a variety of stakeholders whereas the non-Civic leaders relied more heavily on self-motivation and hard work. Non-Civic leaders were also more likely to collaborate with NGOs whereas Civic leaders were more likely to collaborate with other colleagues at various level of government.⁷⁹

This performance change has led to another important behaviour change in the system, this time in the **information** factor: commune leaders providing sanitation information and facilitating toilet sales.

This represented an important change in strategy for WaterSHED. Previously, they had tried to address the underperformance in information through sales agents who were incentivised by commissions from private sector actors, but had struggled to deliver sustainable and resilient behaviour change. WaterSHED then pivoted to addressing the underperformance of information through a different behaviour change approach: commune leaders providing sanitation information and facilitating sales, incentivised by their mandate to improve sanitation coverage and by peer and community recognition. This led to better, more persuasive, and more accessible information about toilets for rural households than even the sales agent intervention has been able to facilitate. Information from commune leaders was also more trusted than information that came through sales agents, since often that sales agent was perceived as a representative of the private sector.^{xiv}

More and better information about toilets

When the Civic Champions training was introduced, marketing and promotion activities through sales agents had already improved the quality, quantity, and accessibility of information about toilets for rural households (see page 11, above). The Civic Champions intervention improved performance further from this new baseline.

Unlike with the sales agents training, the Civic Champion training was more focused on leadership development than on sanitation promotion. Consequently, the sanitation promotion strategies that emerged were developed by commune councillors themselves, so strategies for information dissemination were more diverse and context-specific than they had been. A Before/After comparison found that after the training, commune councillors used similar promotion channels to provide information to households about toilets as before, but that they used a much wider range of promotion techniques.⁸⁰ Newly employed techniques included following up with households planning to build a latrine, instituting sanctions (such as refusing permission to host a wedding party unless the household has a latrine), emotional triggering, and leveraging social norms, among others. Following the training, Civic Champions also engaged with a wider set of stakeholders in the system, coordinating efforts to provide information and promote latrine uptake.⁸¹ The assessment also found that Civic Champions were more strategic than they had been, using certain techniques more commonly with certain kinds of audiences.

^{xiv} Though sales agents were also often government leaders. See D. Pedi, M. Sophanna, P. Sophea, and M. Jenkins, (2014), 'Rural Consumer Sanitation Adoption Study: An analysis of rural consumers in the emerging sanitation market in Cambodia', October, 122.

4.3. Scale and sustainability

As with the Sanitation Marketing interventions, the **depth** of performance changes is well documented. The **scale** and **sustainability** of these performance changes depends on the scale, ownership, and resilience of the behaviour changes that underlie them.

Scale, ownership, and resilience: national government runs Civic Champions training programme

The Civic Champions programme has only recently been fully handed over to the national government, and it is not yet being run nationally, so only preliminary assessments of scale, ownership, and resilience can be made.

Scale:

The National Department of Training is currently leading the Civic Champions programme in seven of the eight provinces in the programme area. This government-led iteration will be completed by the end of December 2021 (assuming no further delay due to COVID-19). The National Department of Training is also starting to test online rollout of the training, as, to date, COVID-19 has delayed rollout. Once the government-led iteration is complete, a decision will be made about whether to integrate Civic Champions into the National School of Local Administration (NASLA). If the decision to integrate it goes ahead as intended,⁸² the scale will be nationwide, and all commune councillors will have the opportunity to participate in the training.



Ownership

There are strong early signs of ownership, albeit these are preliminary at this stage. According to a WaterSHED report from 2019, “[Civic Champions] is seen by the Ministry of the Interior as a highly effective, broad-based enabling programme that supports decentralisation across multiple development sectors – not only in sanitation.”⁸³ The government-led iteration is being funded by the remaining WaterSHED budget but is being managed and administered by NASLA, who have allocated staff to the process (with no external reimbursement for staff time). Additionally, they have contracted WaterSHED core team members to provide them with technical support to complete this iteration. Signs of adaption, such as testing rollout through online platforms to overcome obstacles are also positive. In an update from last year, WaterSHED Government Partnerships Manager, Chea Sang, said “This year, we are seeing several positive signs that government partners are invested long-term. All of the [sub-national government] officers that joined the program have allocated the [training] in their budget, and WaterSHED does not even pay for national or provincial per diem, travel expenses, or accommodations anymore.”⁸⁴ Informal verbal communication suggests that NASLA sees many positive reasons for integrating Civic Champions into the curriculum long-term, including the fact that the training happens as a series, the competition process, and the unique policy of getting participants to pay for their training.



Resilience

A potential threat to resilience is the performance of the ‘training of trainers’ factor. Even with WaterSHED’s involvement, the facilitation cascade was not sufficiently enabling strong training skills in facilitators and coaches. MOI and MRD have only had one chance for a select number of officials to be trained as master trainers. If the master trainers move on to other roles, or if their



skills are not yet sufficiently developed, the facilitation cascade will be further weakened, jeopardising the national government's ability to run Civic Champions, unless it is able to rely on its own capacity to train trainers, which is not adapted to the Civic Champions pedagogy. However, this risk is somewhat mitigated by the fact that experienced WaterSHED core team members have been contracted by government to support them with technical advice and ensuring quality.

Scale, ownership, and resilience: commune leaders promote sanitation messages

Scale:

As of September 2019, the WaterSHED programme area had 1,097 commune councillors in 588 communes across eight provinces, and over 900 (now over 1,000⁸⁵) of them had participated in the Civic Champions programme.⁸⁶ Whilst not every participant is currently providing information about toilets to rural households, this is nonetheless remarkable scale, especially as Civic Champions is now being scaled beyond the programme area.



Ownership

The Civic Champions training is designed so that participants develop their own contextualised strategies for promoting sanitation in their communes, resulting in a high level of ownership over the strategies developed. It is unclear how much commune leaders will own their behaviour changes long after participation in the Civic Champions programme, but encouragingly, the Scale-up evaluation reported that increased latrine uptake (presumably caused by ongoing sanitation promotion) lasted for at least one year following the end of the training programme.⁸⁷ Interestingly, some district and provincial trainers reported that without the incentives and peer support provided by the training, councillors might be less motivated to provide sanitation information and facilitate sales. Even within the training programme, time constraints affected outcomes, in their views.⁸⁸



Resilience

The resilience of this behaviour change depends on whether the national government runs the Civic Champions training programme sustainably. If the national government is successful in doing so, newly elected commune councillors will continue to have the opportunity to develop leadership skills and, if sanitation remains a priority within the Civic Champions training, they will apply these new leadership skills to promoting sanitation. Those who have completed the training may have a chance to refresh skills but even if not, they may be motivated by colleagues' participation and application in a training programme they pioneered.



5. SERVICE DELIVERY LEVEL BEHAVIOUR AND PERFORMANCE CHANGES

5.1. What has changed?

Performance changes in **information** (i.e., better demand generation) and **targeting**, at the heart of which is a more affordable, aspirational, locally-produced product (i.e., better demand fulfilment)

have jointly led to the key desired behaviour change at the service delivery level – more rural households buy toilets.

The key performance change at the service delivery level that this behaviour change yields is simply more toilets being sold at a better price (compared to the baseline), leading to improved sanitation coverage. The RCSAS survey found that 90% of purchasers had installed their latrine within 18 months (of which 55% had installed within six months). Encouragingly, it also found that, once installed, households reported nearly all adults and children usually use their latrine for defecation, though children continued to openly defecate at slightly higher rates than adults. In Kampong Speu, respondents reported 100% use for adults and 97.6% use for children.⁸⁹

More toilets sold

In the original pilot area in Kampong Speu, improved sanitation nearly doubled between 2009 and 2012, from a baseline of 21% to 38.9%. This growth is entirely attributable to increased purchase of pour-flush latrines; there was a decrease in the number of households using dry pit latrines in the area in the same period.⁹⁰ This translates into an annual increase in improved sanitation coverage of 4.7% to 7.0%, which is four to five times the average annual rate of increase of 1.3% that could be expected without any intervention.⁹¹

A different piece of research that compared improved sanitation coverage between 2011 and 2014 across seven of the eight provinces WaterSHED worked in, found provincial annual rates of increase of, on average, 2.9%, ranging from an increase of 1.7% per year in Battambang to an increase of 5.7% per year in Pursat. All except one were above the background rate of 1.3%.^{92 xv}

Evaluations of the impact of the Civic Champions programme found that the two districts where Civic Champions was piloted experienced latrine sales at rates 29% and 59% higher than a control district where WaterSHED was implementing marketing activities without Civic Champions.⁹³ This represented a 400% increase in the number of toilets sold when compared to the average across the eight provinces (on average 217 improved pour flush latrines sold each month compared with 55 per month in the same period across the programme area).⁹⁴

Sales data from the Scale-up iteration showed that “growth in annual latrine sales was 32 percentage points higher in Civic Champions communes, during the 12 months of Scale-up implementation, and 22 percentage points higher in the 12 months after Scale-up (n=88 Scale-up communes with sales data), compared to non-intervention areas (n=455 communes with sales data).”⁹⁵ Scale-up data show that the Civic Champions leadership development program reversed a trend of slowing latrine sales.⁹⁶

Toilets sold at a better price

The latrine core package was sold at a price point of between 45 and 75 USD over the programme period.⁹⁷ Analysis from the 2012 survey shows that despite cheaper options being available, most households (81% of survey respondents in 2012⁹⁸) then chose a concrete or brick superstructure,

^{xv} The one outlier, interestingly, was Kampong Speu which only increased 0.4% per year between 2011 and 2014, according to this data. This may be partly because more demand was captured earlier as Kampong Speu was the pilot area so rates of increase slowed down, though it may simply reflect different sampling strategies – the later survey covered a much wider area of Kampong Speu than the earlier survey.

like those that were being constructed prior to the introduction of the latrine core. The average total market price in 2012 for the latrine core package and a concrete or brick superstructure was estimated to be equivalent to 323.63 USD.⁹⁹ Monitoring data from Civic Champs Hybrid, collected through the village chief, shows a wide range of estimates of the total household spend on purchasing and installing a latrine. 356 USD was the average recorded cash expenditure across all households.¹⁰⁰ These prices are nearly half the previous cost of a latrine and high-end superstructure according to mason’s estimates but are similar to baseline costs according to other estimates (estimates varied widely).¹⁰¹

5.2. Scale and sustainability

The scale and sustainability of service delivery performance changes is dependent on the scale, ownership and resilience of rural households buying more toilets and, in turn, on the scale and sustainability of the changes in WASH system factors that underlie this change.

Scale:



According to sales data collected for WaterSHED’s monitoring system, enterprises that WaterSHED worked with sold 143,393 toilets to customers in the seven-year period between January 1, 2011 and December 31, 2017, in the programme area. A piece of analysis done for WaterSHED¹⁰² estimates that enterprises not working with them sold 98,819 toilets in the same period. The authors also estimate that without programme activities 120,248 toilets would have been sold in the same seven-year period.^{xvi} Using these estimates, the number of toilets sold more than doubled, relative to what would have happened without any intervention.

WaterSHED data¹⁰³ shows that sanitation coverage increased from 29% to 77% from 2011 to 2020 in the programme area.

	2011	2014	2020
Battambang	44%	53%	78%
Kampong Cham	26%	41%	79%
Kampong Chhnang	NA	36%	71%
Kampong Speu	27%	32%	76%
Pailin	39%	50%	77%
Pursat	19%	40%	72%
Takeo	23%	40%	87%
Tboung Khmum	22%	38%	67%
Total	29%	41%	77%

Whilst comparison data is scarce, the latrine core package does appear to have increased latrine sales among female-headed, less educated households, including some registered as ‘poor,’ although sales were not as high as among other demographics.¹⁰⁴ Generally though, WaterSHED targets the 20-80% wealth quintiles, and recognises that it is difficult to reach the poorest 10-20% of households with a marketing approach.¹⁰⁵

^{xvi} Counterfactuals are notorious difficult to estimate for systemic change programming. In this case, this number was derived by compounding the background sanitation coverage of 1.3% (see Section 2) annually over the seven-year period and multiplied by the estimated number of households in the target market. It was also assumed, based on a previous survey (Pedi, 2014) that 10% of latrine sales come from households that need to repair or replace an existing latrine.

Ownership



The 2016 evaluation of WaterSHED's marketing interventions assessed the sustainability of the key behaviour change at the service delivery level: rural households buying toilets. Their conclusions are worth reproducing in full:

"The evaluators argue that the key indicator for sustainability of sanitation outcomes at the household level is the extent to which households value and use their toilets. If a household values and uses their toilets, they are likely to take measures to ensure its ongoing function. Secondary data and discussions with users during the evaluation suggest that the level of use is high. The RCSAS found that over 90% of households that bought new latrines in the Hands-Off program area had never owned a latrine before and had mostly practiced open defecation. The study found that amongst latrine adopters there was very little open defecation - 3% for adults and 15% for children.¹⁰⁶ This was consistent with information gathered by the evaluation team, with most adopters expressing a high level of satisfaction with their latrines. There were no signs during the evaluation or indications in the secondary data to suggest that the sanitation behaviour change is anything other than permanent."¹⁰⁷

Resilience



Resilience of service delivery depends on rural households' will and capacity to continue to buy toilets and on enterprises' ability to continue to sell toilets. To maintain demand, new consumers need ongoing access to finance, sufficiently strong incentives to be willing to pay for latrines, suitable sanitation information, and a well-targeted, desirable, affordable sanitation package.

- **Finance:** experience thus far suggests that many rural households can purchase a latrine independently, even if it means saving up for one. This may not be the case for poorer households, so if many rural Cambodians' financial circumstances changed for the worse, demand could be threatened.
- **Willingness to pay:** other NGOs work on sanitation in some of the same areas WaterSHED worked in, and some of them offer subsidies. This could undermine households' willingness to pay for toilets if subsidies are not well-targeted. However thus far, suitable sanitation information, changing social norms and an aspirational product have been sufficient incentives for rural households to be willing to invest.
- **Ongoing supply:** enterprises' ability to continue selling toilets – and particularly to offering a well-targeted, desirable, and affordable sanitation package – has been assessed in Section 3.3.

Arguably potential customers also need to have confidence that they will be able to continue maintaining and using the toilet, following purchase, to make an investment. This depends on other resources identified in the 2016 evaluation,¹⁰⁸ such as:

- **Maintenance:** latrine core toilets are constructed of durable materials and are produced locally, so enterprises can support customers with repairs if needed. Customers also pay

for their toilets, often prioritising higher-end toilets even where it means delay. This suggests they value them and are likely to maintain them.

- **Water:** access to water was not observed to be a problem, though the evaluation was conducted in the rainy season.
- **Pit emptying services:** the evaluation identified no commercial emptying service in most of the areas visited, and households knew little about the health risks of emptying pit containers back into their environment. Depending on use, it can take about five years to fill a pit.

5.3. Why did these changes happen?

Even without any programme activities, latrine sales would have continued to increase in the programme area,^{xvii} but WaterSHED's work led to an accelerated rate of latrine uptake.¹⁰⁹ This was partly because more affordable quality latrines were available to buy. It was also because the performance of other factors in the system – information and targeting in particular – improved in ways that increased demand for toilets among rural households. By the end of the programme period, many rural areas benefited from commune leaders who provided trusted information and facilitated sales, and from enterprises who provided a sanitation package appropriately targeted to meet rural householders' needs.

Evaluations of WaterSHED's successes were rigorous, using a variety of methods (such as Before/After comparisons, comparison with a counterfactual, and comparison with a trend) to determine whether latrine sales increased over and above estimates of what would have happened anyway because of WaterSHED's work. All the evaluations concluded that WaterSHED contributed, at least in part, to the significant growth in latrine uptake.

It is not possible to disaggregate external effects from WaterSHED's impact beyond what evaluations have already done. Other NGOs' work on sanitation promotion in areas where WaterSHED worked makes it difficult to fully attribute changes to WaterSHED. It is also possible that another change, such as a policy change, an increase in off-farm work which gave households both increased income and increased exposure to latrines, or an increase in forest clearances, contributed to the dramatic increase in latrine uptake. Indeed, rural sanitation coverage jumped from 22.9% in 2009 to 67.4% in 2016 across the country¹¹⁰ – a remarkable improvement in less than a decade.^{xviii} Nonetheless, the overall picture from these evaluations is compelling.

^{xvii} The drivers of increased latrine sales identified at baseline are listed in Emerging Markets Consulting, 'Supply Chain Analysis and Strategy Development: Final Report', 2009, p. 24 <<https://watershedasia.org/water-and-sanitation/>>.

^{xviii} Though note that during this period, WaterSHED worked in eight provinces and another market-based sanitation programme – iDE's 'Sanitation Marketing Scale-Up' – worked in another seven provinces to promote rural sanitation. Together these programmes likely contributed to overall national growth.

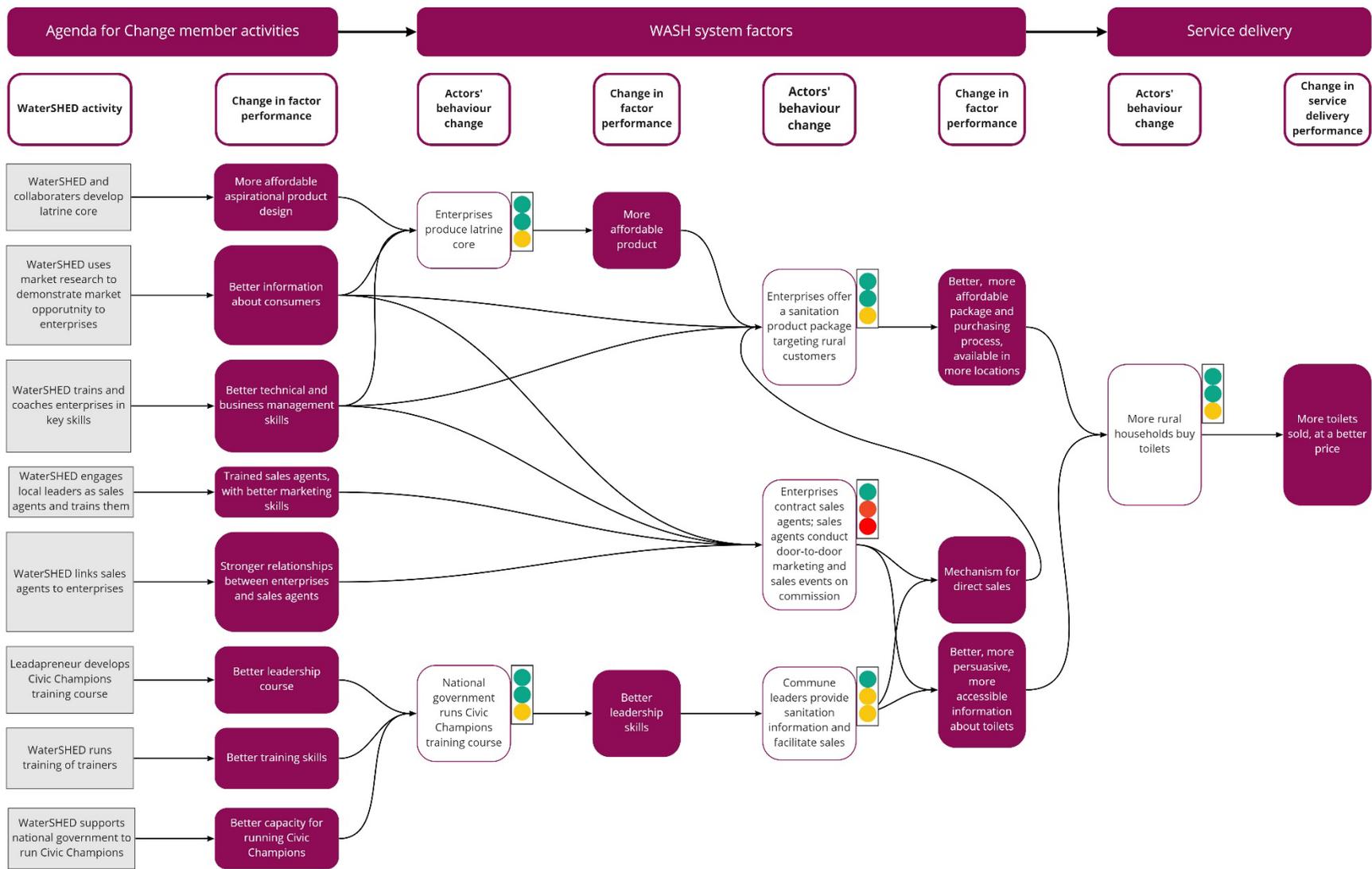


Figure 4: WaterSHED's theory of change, for the streams of work included in this assessment, with traffic light assessments of scale, ownership, and resilience

6. HOW WATERSHED FACILITATED CHANGE

The focus of this report is on whether – and to what extent – systemic change was achieved by WaterSHED’s work in sanitation in rural Cambodia. Having established that a series of important and likely sustainable changes have occurred, it is worth examining how WaterSHED achieved these successes.

6.1. WaterSHED’s approach

The distinguishing feature of WaterSHED’s approach was its focus on achieving sustainable impact and, relatedly, its commitment to exit after a ten-year period. From the beginning, WaterSHED determined that its goal would be improve service delivery levels by changing the way the system worked, so that its presence as a foreign-funded NGO would no longer be needed.¹¹¹ As one of the founders put it, WaterSHED “tried to solve the underlying problems in such a way as to permit our eventual exit (and if we couldn't make headway, we figured we should exit anyway and stop wasting time and money).”¹¹²

WaterSHED’s commitment to sustainability, and to its own exit, had a significant impact on how it approached the intervention. WaterSHED defined success as sustainable impact. This caused them to think of permanent system actors– government bodies, private sector enterprises, and households themselves – as solution providers, rather than recipients of WaterSHED’s work. Rural households were perceived as active consumers, whose aspirations and priorities needed to drive product design. Enterprises and government bodies were seen as actors who could and would drive change if their incentives were aligned with providing sanitation solutions to rural households and if they had the capacity to competently play the roles needed for the sanitation system to function well.

WaterSHED’s role, then, was not to drive change but to address the underlying issues that had previously prevented other local actors from driving change, thereby facilitating them to do so. This meant WaterSHED focused its resources on identifying and supporting actors to change their behaviour, rather than on providing solutions directly. This aspect of WaterSHED’s approach is explored in more detail in the following section.

Taking a facilitative approach required WaterSHED to be dynamic and adaptive in its implementation. It had a theory of change for how its activities would lead to impact, but continually assessed whether that theory held true in practice. When things did not work as expected, WaterSHED pivoted. This was made possible by the fact that it has a decade-long implementation period, and by the fact that it prioritised continued analysis, evaluation, and learning. For example, it was an evaluation of the Hands-Off Sanitation Marketing Programme that provided WaterSHED with the evidence that led to its decision to pivot from a focus on sales agents to a focus on Civic Champions. There are resource implications to both these enabling factors, but they are critical for taking the approach, and achieving the kind of successes, WaterSHED did.

WaterSHED and its inception partners also invested heavily in research to help them understand the sanitation system and where feasible and relevant opportunities for change lay. Instead of predetermining what might be causing low rates of sanitation uptake, WaterSHED followed the evidence and adapted its intervention design accordingly. For example, although it was initially expected that WaterSHED and its partners would design a very low-cost latrine product, when findings showed that such latrines would not be aspirational, they adapted and designed a latrine product

package that was more expensive yet much more attractive to consumers. Similarly, when WaterSHED found that the leadership skills of commune and village leaders seemed to be driving latrine sales, they prioritised leadership development. WaterSHED did not limit its approach to technology, infrastructure, policies, or any other system factors, but instead followed the evidence to find the opportunities for the greatest sustainable impact. All of this points to the value of flexibility and adaptive management when taking a systems strengthening approach. This was enabled by donors who valued system strengthening and a market-based approach to sanitation.^{xix}

WaterSHED's approach proved to be effective for strengthening systems and achieving behaviour and performance changes that led to improved service delivery levels. Although every intervention context is unique, these experiences hold important insights for NGOs and programmes that want to follow suit, starting with a commitment to achieving sustainable impact, possibly with a pre-determined exit date. From here, programmes would do well to adopt WaterSHED's commitment to research and identification of underlying constraints and opportunities for change in the systems they work in, its perception of permanent system actors as competent solution-providers who can drive change, its facilitative role, its commitment to monitoring, analysis, evaluation and learning, and its dynamic, adaptive management style.

6.2. How important is collective action?

Agenda for Change promotes collective action as a critical aspect of achieving strong WASH systems.¹¹³ The assumption is that achieving positive system change will require collaboration and coordination between numerous independent actors, each with their own different incentives and capacities. There are at least two different ways in which a member organisation might engage in collective action, as Agenda for Change defines it. Firstly, they may work with permanent system actors – the public and private organisations that will remain in the system long after the NGO's activities have ceased. Secondly, they may work with other donor-funded actors. WaterSHED engaged in both these types of collective action: the first was fundamental to its vision of sustainability and was a key means towards the system strengthening end it was pursuing; the second was more incidental.

As the previous section explains, working with private and public permanent system actors was fundamental to WaterSHED's approach to catalysing sustainable change. WaterSHED staff recognised that any successes achieved in the WASH market system by doing things themselves, however impressive in the short term, simply would not last – and would not continue to reach more households – when they inevitably had to stop doing those activities. Consequently, WaterSHED looked for permanent market actors to collaborate with, who could make and sustain the changes that would ultimately benefit households.

For example, iDE, another NGO working on rural sanitation marketing in Cambodia, hired sales agents to promote and sell toilets to rural households to maximise sales. WaterSHED, like iDE, recognised that information was an underperforming factor in the system, but instead of hiring sales agents themselves, they trained sales agents, introduced them to enterprises, and encouraged the businesses

^{xix} WaterSHED was funded by a variety of foundations and private sector donors over its three phases, including The Stone Family Foundation, Bill and Melinda Gates Foundation, USAID, The Waterloo Foundation, Who Gives A Crap, WaterAid, Vitol Foundation, Grand Challenges Canada, Unilever and the Diageo Foundation. See <https://www.watershedasia.org/our-partners/>

to hire them on commission. “This was a strategic choice to enable WaterSHED’s future exit from its role of facilitating market transactions, in line with the Hands-Off guiding philosophy.”¹¹⁴

In fact, this did not work as well as hoped, and it became apparent that it would not likely be sustainable (in part, because the sales agents were not sufficiently confident and skilled and in part because there was no one other than WaterSHED who had the capacity and incentive to recruit, train and manage sales agents, and to introduce them to enterprises). WaterSHED then decided to address the underperformance of the information factor a different way, using commune councillors to promote sanitation, provide information about toilets, and facilitate sales instead of sales agents. This was more effective, and by working closely with government throughout the process WaterSHED was eventually able to hand even the roles they played (training and training of trainers) over to the government.

Whilst there are some activities that WaterSHED staff did directly, overall, the team demonstrated an impressive commitment to finding permanent system actors they could collaborate with to develop a sustainable, locally owned solution to any underperformance they identified in the system. This approach required a high degree of collective action at every stage, from engaging government and private sector stakeholders in the design of a new approach or business model through to permanently handing over any role WaterSHED played to those stakeholders. Comparing the two major, ongoing sanitation marketing approaches in rural Cambodia at the time, an independent evaluation of WaterSHED noted, in 2016, that “WaterSHED placed considerable emphasis on engaging with government within sector forums, in policy development and providing capacity building support, whereas iDE allocated less effort to this area.”¹¹⁵

According to evaluations, WaterSHED’s work with the Civic Champions programme also led to greater inter-government collaboration. The evaluation of the Scale-up iteration of Civic Champions found that participants reported better cooperation with other commune council members, especially across party and gender lines. A later evaluation of the Hybrid iteration drew similar conclusions, finding the Civic Champions mentioned working with a variety of stakeholders to resolve issues in their communes, whereas the non-Civic Champion leaders relied more heavily on self-motivation and hard work.

WaterSHED also worked with other donor-funded organisations, though this was less fundamental to its approach and success. Agenda for Change did not formally exist when WaterSHED started its work in Cambodia, but there is nonetheless evidence of collective action with other NGOs in many of its activities. In fact, sanitation marketing research and early trialling was undertaken in the period 2008-2010 by a few organisations including WaterSHED, iDE, Lien Aid, and World Toilet Organisation, and the ‘latrine core’ product design came out of this collective’s efforts. Later, the 2016 evaluation reported that, at the time, WaterSHED had working agreements with 15 other organisations active in the rural sanitation sector in Cambodia and later, WaterSHED collaborated with WaterAid and district government WASH committees on the Hybrid iteration of Civic Champions.¹¹⁶ Overall, though, WaterSHED’s collaborations with permanent market actors were far more critical to their system strengthening efforts than their collaborations with other NGOs were.

7. CONCLUSION

As the aim of this case study was twofold - to test a process for measuring systems change and to apply it to the context of WaterSHED's work - this section includes a summary of what was learned about WaterSHED's contribution to systems change in the sanitation system as well as reflections on the approach and lessons for future application.

7.1. WaterSHED's contribution to systems change and improved service delivery

WaterSHED's work in the sanitation market in eight provinces of rural Cambodia led to a remarkable increase in sanitation coverage and latrine use, likely more than doubling the number of toilets that would have been sold without any intervention.¹¹⁷ The key drivers of this improvement in sanitation coverage were the improved performance of critical WASH system factors, including better sanitation promotion and **information** and better product package **targeting**, centred on a more affordable, aspirational, and locally-produced product.

The performance of these factors improved because of behaviour changes made by permanent private and public market system actors. Enterprises began producing more affordable toilets that could be constructed by rural households without the need to hire a mason, using the latrine core product design, and started selling it as part of a single sanitation package that included home delivery in the price. Elected commune councillors started proactively providing information to rural households about toilets, promoting the uptake of improved latrines.

These behaviour changes were, in turn, triggered by a chain of WASH system factor performance changes and behaviour changes – for instance in **leadership development** for commune councillors – that can be traced back to the activities WaterSHED did, reflecting the theory of change visualised in Figure 5 below and expanded up on in Figures 3 and 4, above.



Figure 5: Agenda for Change members' theory of change, implicit in system strengthening efforts

As the service delivery (sanitation coverage) changes achieved were caused by changes to actor behaviour and factor performance in key WASH system factors, the scale and sustainability of those service delivery performance improvements are also dependent on the scale and sustainability of the changes in WASH system factors. Whilst this is inherently more sustainable than being directly dependent on WaterSHED itself, a more nuanced analysis of scale and sustainability can be done by analysing the scale, ownership, and resilience of the key behaviour changes.

Doing this, we found that there is good evidence of scale across all eight of the provinces WaterSHED worked in for all the key behaviour changes. There was also good evidence of ownership for enterprises' behaviour changes in production and targeting, and whilst there was not good ownership of the sales agents' model by enterprises, this was replaced by the Civic Champions model. It is too early to yet conclude whether the Civic Champions approach will be fully owned and sustained but early signs are positive. Trained Civic Champions have demonstrated good ownership of their sanitation promotion and information provision during the programme, and sales in Civic Champions'

communes remained at elevated rates for at least a year after the training finished.¹¹⁸ Though, there are also indications that without the peer support and incentives provided by the training programme, commune councillors might not sustain the intensely proactive sanitation promotion activities they had been committed to (see above). However, in many communes there is also less need for intensive sanitation promotion, given that sanitation coverage rates have risen so substantially. What is needed in these communes is adaptive and creative approaches to promote sanitation adoption to late adopters and, encouragingly, Civic Champions did show higher levels of initiative and adaptive problem solving than non-Civic Champion commune leaders.¹¹⁹ The sustainability of improved sanitation promotion by commune councillors also depends on the extent to which the Civic Champions training programme is itself owned and maintained by the MOI, MRD, and the National Department of Training, as well as on coordination and collaboration between them (MOI has the mandate for investing in the capacity of subnational government, and MRD has the mandate for achieving the national goal of universal sanitation by 2025; the Civic Champions programme addresses both). This remains to be seen.

The greatest threat to the sustainability of the elevated rates of increasing sanitation coverage is the resilience of the behaviour changes which caused them. Whilst most of these behaviour changes are likely to be sustained if conditions remain the same, they are less likely to be sustained if adaptation is required. For example, if refreshed consumer market research is needed by enterprises to reach the late adopters, if commune councillors come under pressure to promote other aspects of community development, or if the National Department of Training needs to train new Master trainers to deliver Civic Champions to a suitable standard, then there will be a need for resources that are not yet readily supplied by the system. During the programme period, most adaptations (such as the shift from sales agents to Civic Champions) were initiated by WaterSHED. This is not to say that resourceful actors could not adapt and invest; they certainly could and may well do so. WaterSHED have made every effort to institutionalise changes so that when adaptations are needed, private and public market actors have the incentives and capacity to make adaptations themselves. Considerable learning could be gained from assessing, in three to five years' time, the extent to which these changes have proved resilient and what adaptations were made.

Despite the potential risks to resilience, overall WaterSHED's system strengthening efforts have clearly contributed to dramatically improved sanitation service delivery. Not only have more toilets been sold during the WaterSHED programme period, but thanks to the changes made to underlying system factors, assessments suggest that more toilets will continue to be sold without WaterSHED's ongoing involvement. WaterSHED has demonstrated that prioritising sustainability need not come at the cost of impact; indeed, WaterSHED defines meaningful and inclusive impact *as* sustainable impact.

WaterSHED was only able to achieve this by working collaboratively with public and private market actors to develop a sustainable, locally owned solution to any underperformance they identified in the sanitation market system. Overall, WaterSHED's collaborations with permanent market actors were critical to their system strengthening efforts.

7.2. Reflections on the approach

The application of this approach to WaterSHED's work has been a valuable learning experience. A few reflections have emerged from the process on the strengths and weaknesses of the approach.

On the positive side, this approach enabled us to map the links clearly, systematically, and comprehensively between WaterSHED's system strengthening efforts and improved service delivery outcomes. Systems change is notoriously complex and analysing a programme's contributions to system change is difficult because of the numerous factors that affect the way systems work and the complex ways in which they influence each other. This approach provided a way of breaking down the changes that happened in the system into actor behaviours and factor performances so that we could systematically analyse each of the changes and each of the links between them, as well as assessing what other factors might have contributed to each of the changes. Having done so, we were able to meaningfully look at the bigger picture and clearly see where WaterSHED's efforts had contributed to deep, sustainable, and scaled changes in the system, as well as where the vulnerabilities in depth, sustainability, and scale were. In other words, systematically applying this approach led to new insights on the strengths and vulnerabilities of the systems changes to which WaterSHED was contributing, suggesting it could be helpful for adaptive management as well as for capturing and reporting on systems change.

An advantage of the approach is that it can be used to monitor and assess contributions to system change at varying levels of detail. Simplifiers like the theory of change diagram and traffic light assessments were useful for quickly identifying how different activities, actor behaviour changes, and factor performance changes effected service delivery levels. More detailed analyses of each of the behaviour and performance changes then allowed a richer analysis of the depth, sustainability, and scale of changes. Importantly, this approach allows analysts to *assess* a programme's contribution to system change, rather than only communicating changes in a simplified way as some other frameworks do.

We found that we were able to use existing data sets and reinterpret them through the lens of this approach without having to do any further primary research. Doing so highlighted where there were information gaps, too. Having said that, WaterSHED has an unusually rigorous, well-documented, and well-communicated evidence base for the impact of its work. How easy it will be to apply the same approach without primary research for other programmes with more typical databases of information remains to be tested.

The approach has its challenges too. This is not a 'quick and easy' approach to assessing systems change. It requires a strong understanding of an organisation's work and of the systems it is working to strengthen, and even then, there is no formula for how to frame the component parts of the system to aid analysis. For example, we spent some time debating whether sanitation promotion and marketing were essentially the same factor (i.e., providing information about toilets) or not. To some extent this process of framing is an art not a science, and even as an experienced systems change analyst, it took several attempts to reconstruct the chain of behaviour changes and performance changes and to identify which system factors were really being targeted by WaterSHED. Applying the approach well also requires a strong and tightly defined understanding of key concepts (such as 'behaviour change,' 'performance change,' and 'factor' or 'function,') and of how they are related. Overall, there is likely to be a steeper learning curve with this approach than with some others that are less rigorous.

Finally, as with all such approaches, any attempt to make simplified, concrete assessments (such as the traffic light assessments used here) are necessarily somewhat subjective. To mitigate this, it is important to have criteria for making the assessments, to have multiple people critique and debate

the assessments made, and to treat the conclusions (e.g., red, orange, green) as indicators rather than absolutes.

7.3. Lessons for future application

This approach will be applied to two more Agenda for Change case studies. Lessons we have learned on this case that we will take forward into the next two cases include:

- The first step – and one of the most important ones - was mapping the theory of change, including activities, behaviour changes and performance changes, and service delivery improvements. It was worth allocating time to this, as it was relatively straightforward to then mine the available data and documents for the information needed for each behaviour and performance change, and the links between them. Knowledge management was also easier once the initial map was created. Creating the map did require an initial perusal of documents and conversations with the team; next time, the schedule could be planned to accommodate this two-stage process.
- We had initially intended to look at system strengthening efforts and results for just one district. It proved too difficult to disaggregate results for just one district, and although a district was selected, we quickly realised it would not be representative of what WaterSHED achieved, as there was so much variation between districts. We therefore decided to take a wider view. It will be interesting to see whether it makes sense to choose just one district or to take a wider view on later case studies.
- Initially, we tried to use the case to both present the analysis and to tell the story of systems change in a simple way. It proved very difficult to do both in the same document as the analysis needed to be rigorous, detailed, and technical whilst good communications generally need to be simple and straightforward. The process was much improved when we recognised that the purpose of this case study was to present the approach and demonstrate how it can be used for measuring, monitoring, assessing, and analysing system change. The programmes can then communicate to different audiences themselves, using the evidence and data gathered.

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