



FINANCIAL ANALYSIS OF DECENTRALISED RURAL SANITATION SERVICE DELIVERY IN CAMBODIA



SEPTEMBER 2019

---

## DISCLAIMER

The purpose of this disclaimer is to clarify which components of the Decentralisation of Rural Sanitation Service Delivery (DRSSD) functional transfer have been considered for the financial analysis within this report and which have not.

The financial model has taken into account unit costs from the implementation of technical support under the World Bank Group-funded DRSSD project (Phase I and II) up to the point of open defecation free (ODF) verification (i.e. pre-ODF activities) and does not include the activities required to sustain ODF status (i.e. post-ODF activities). Throughout the report, these pre-ODF activities are referred to as 'DRSSD promotional activities' and include sanitation promotional activities, monitoring, governance set up, trainings, capacity building, peer-to-peer learning, stakeholder meetings, community led total sanitation (CLTS) and behaviour change communication (BCC) related activities, training-of-trainers, learning events and workshops. Capital expenditure (CapEx) and operation and maintenance (O&M) costs are based on the National Action Plan (NAP) on Rural Water Supply, Sanitation and Hygiene 2019-2023 II costing. This financial model should not be compared to the NAP II due to the dissimilar data points and scope.

For a detailed list of these activities, please see **Appendix B (Table 8)**.

## TABLE OF CONTENTS

<b>ABBREVIATIONS.....</b>	<b>5</b>
<b>1. INTRODUCTION.....</b>	<b>6</b>
<b>2. ABOUT THIS REPORT .....</b>	<b>7</b>
2.1 Objectives and scope.....	7
2.2 Methodology .....	7
<b>3. CONTEXT OF CAMBODIA .....</b>	<b>9</b>
3.1 Sanitation in rural Cambodia .....	9
3.2 Decentralisation & Deconcentration .....	9
3.3 DRSSD Pilot Project .....	10
<b>4. DECENTRALISATION OF SANITATION IN CAMBODIA: FINANCIAL ANALYSIS.....</b>	<b>13</b>
4.1 Description of activities .....	13
4.2 Roles of each actor .....	13
4.3 Budget .....	18
<b>5. DECENTRALISED SANITATION: SOURCES OF FUNDING &amp; FINANCIAL PROCESSES.....</b>	<b>21</b>
5.1 Sources of funding & expected use of proceeds.....	21
5.2 District and commune development funds.....	23
5.3 Development Partner Funding .....	23
5.4 Mission package.....	24
5.5 Use of proceed and additional budget required.....	24
5.6 Annual budget planning, allocation and usage cycle .....	24
5.7 DRSSD budget transfer .....	25
5.8 Bottlenecks: Planning, allocation, usage and transfer of funds for DRSSD.....	26
<b>6. SCALING UP DRSSD FUNCTIONAL TRANSFER NATIONWIDE.....</b>	<b>29</b>
6.1 Modelling methodology overview.....	29
6.2 Limitations of the model.....	30
6.3 Prospective Analysis – Results .....	31
6.4 Cost Analysis of scaling up and cost effectiveness of DRSSD.....	32
<b>7. CONCLUSIONS &amp; RECOMMENDATIONS .....</b>	<b>34</b>
7.1 Conclusion .....	34
7.2 Recommendations .....	34
<b>BIBLIOGRAPHY.....</b>	<b>36</b>
<b>APPENDIX A.....</b>	<b>38</b>
<b>APPENDIX B.....</b>	<b>42</b>

## LIST OF FIGURES

<b>Figure 1</b> - DRSSD Pilot overview, Sevea 2019 .....	12
<b>Figure 2</b> – Stakeholders, relationships and simplified roles of each governmental actor, Sevea 2019	14
<b>Figure 3</b> - Description of promotional activities during DRSSD pilot, Sevea 2019.....	15
<b>Figure 4</b> - Financial process for sanitation budget transfer within Cambodian government , Sevea 2019 .....	26
<b>Figure 5</b> – Sanitation budget transfer late process bottleneck within Cambodian government, Sevea 2019 .....	27
<b>Figure 6</b> - Kampong Chhnang Province sanitation budget transfer, Sevea 2019 .....	28
<b>Figure 7</b> - % of coverage per province in 2025 based on SNV, iDE and WaterSHED data, Sevea 2019	31
<b>Figure 8</b> – Number of districts per category of coverage in 2020, 2025 and 2030, based on SNV, iDE and WaterSHED data, Sevea 2019 .....	32
<b>Figure 9</b> – Cost of decentralised rural sanitation until 2025 taking costs from DRSSD pilot and NAP II data (without post-ODF activities), Sevea 2019 .....	33
<b>Figure 10</b> - Cost for every province until 2025 with DRSSD promotional activities, Sevea 2019 .....	33
<b>Figure 11</b> - Optimal classification, Sevea 2019 .....	39
<b>Figure 12</b> - DRSSD pilot data (shared and private latrines) .....	40

## LIST OF TABLES

<b>Table 1</b> – Estimations of yearly fixed costs at each level of administration based on DRSSD pilot costs, Sevea 2019 .....	18
<b>Table 2</b> - Staff allowances by type of event based on DRSSD pilot project costs, Sevea 2019 .....	19
<b>Table 3</b> -Estimations of yearly variable expenses of every administrative level based on DRSSD pilot costs, Sevea, 2019.....	19
<b>Table 4</b> – Estimation of total expenses for each level of administration based on DRSSD pilot costs , Sevea 2019 .....	20
<b>Table 5</b> - Sources and amounts of funding for each level of administration and TS, Sevea 2019.....	22
<b>Table 6</b> – Reaching access to sanitation in rural areas in 2025 and 2028 based on DRSSD pilot data, Sevea 2019 .....	32
<b>Table 9</b> - List of fixed and variable costs taken from DRSSD pilot project.....	42

## ABBREVIATIONS

<b>BCC</b>	Behaviour Change Communication
<b>CC</b>	Commune Council
<b>CCWC</b>	Commune Council for Women and Children
<b>CIP</b>	Commune Investment Programme
<b>CLTS</b>	Community Led Total Sanitation
<b>CSF</b>	Commune Sangkat Fund
<b>D&amp;D</b>	Decentralisation & Deconcentration
<b>DA</b>	District Administration
<b>DDOF</b>	District Department of Finance
<b>DMF</b>	District Municipal Fund
<b>DORD</b>	District Offices of Rural Development
<b>DP</b>	Development Partner
<b>DRSSD</b>	Decentralisation for Rural Sanitation Service Delivery
<b>DSC</b>	District Sanitation Committee
<b>DSO</b>	District Sanitation Officer
<b>DWG</b>	District Working Group
<b>FTCG</b>	Function Transfer Coordination Group
<b>HH</b>	Household
<b>JTWG</b>	Joint Technical Working Group
<b>MEF</b>	Ministry of Economy and Finance
<b>MIS</b>	Management Information System
<b>MOI</b>	Ministry of Interior
<b>MRD</b>	Ministry of Rural Development
<b>NAP</b>	National Action Plan
<b>NCDD</b>	National Committee for Democratic Development
<b>NCDDS</b>	National Committee for Democratic Development Secretariat
<b>NGO</b>	Non-Governmental Organisation
<b>NLE</b>	National Learning Event
<b>NSP</b>	National Strategic Plan
<b>OD</b>	Open Defecation
<b>ODF</b>	Open-Defecation Free
<b>PA</b>	Provincial Administration
<b>PAP</b>	Provincial Action Plan
<b>PDEF</b>	Provincial Department of Economy and Finance
<b>PDRD</b>	Provincial Department of Rural Development
<b>PT</b>	Provincial Treasury
<b>PWG</b>	Provincial Working Group
<b>RWSSH</b>	Rural Water Supply, Sanitation and Hygiene
<b>SDG</b>	Sustainable Development Goal
<b>SNA</b>	Sub-National Administrations
<b>TS</b>	Technical Support
<b>ToT</b>	Training of Trainers
<b>TWG</b>	Technical Working Group

---

## 1. INTRODUCTION

Corresponding with the Sustainable Development Goal's (SDG) target of global improved sanitation coverage by 2030, the Royal Government of Cambodia (RGC) launched the National Strategic Plan for Rural Water Supply, Sanitation and Hygiene (NSP-RWSSH), which aims to reach 100% sanitation coverage by 2025 [1]. According to the latest Cambodia Socio-Economic Survey 2017, it was estimated that rural Cambodia has attained 71% access to improved sanitation facilities. Therefore although the coverage has seen significant improvements over the past few years, there is still much to be done to achieve the fast-approaching sector targets [2].

To accelerate the rate of sanitation coverage, public funding is needed to enhance the enabling environment for generating demand in the community and for facilitating and strengthening the private sector. The cost of latrine construction is mostly incurred by families themselves, with subsidies only provided in compliance with the Guiding Principles for Targeted Sanitation Subsidies, set by the Ministry of Rural Development (MRD). As with many departments within the Government decentralisation is seen as the conduit necessary to help Cambodia reach its sanitation sector goals.

In 2015, SNV was contracted by the World Bank Group to initiate a pilot Technical Support (TS) in Decentralised Rural Sanitation Service Delivery (DRSSD) in 10 districts (subsequently 15 districts in 2018) of Cambodia. Phase I in 2015 primarily focused on providing support to 10 districts via capacity building, planning and coordination, resource mobilisation and implementation. Phase II (2018-2019) then continued services to the 10 existing districts, and adding five new ones; the inclusion of the initial 10 providing an opportunity to incorporate knowledge and lessons from Phase I. The results obtained from both phases provide information to help guide the scaling up of decentralised sanitation service delivery to reach 100% sanitation coverage in rural Cambodia.

Sevea Consulting was brought on under a consulting agreement to analyse (via the collection of both primary and secondary data) the costs involved with transferring sanitation service delivery functions from the national to the subnational level in order to estimate the costing under a decentralised system, as well as to identify the bottlenecks that are impeding the progress of this development.

## 2. ABOUT THIS REPORT

### 2.1 Objectives and scope

**Main objective:** To undertake a financial analysis of DRSSD in terms transferring functions to the subnational levels to estimate the total costs of scaling up such a programme nation-wide.

**Scope:** To assess the financial needs of decentralising sanitation services in 15 (10 old, 5 new) districts to evaluate how to reach full sanitation coverage nationwide. The field work for this assessment took place in in three districts: Tbong Khmum (in Tbong Khmum); Oral (in Kampong Speu); and Kampong Tralach (in Kampong Chhnang).

#### Specific objectives:

1. Provide a report to the Function Transfer Coordination Group (FTCG) on the financial mobilisation required for decentralised programme
2. Conduct a financial analysis of transferred sanitation function from the national to sub-national level
3. Conduct a cost-effectiveness analysis of the TS vis-à-vis sanitation coverage increase and improvements in district capacities
4. Document financial processes and bottlenecks to make recommendations for planning and budgeting processes
5. Review financial guidelines and extract lessons from key informants before formulating recommendations for the financial analysis
6. Share knowledge gained with FT CG, SNV and Subnational Administrations (SNAs) through a presentation at the National Learning Event (NLE)

### 2.2 Methodology

The process consisted of four stages, commencing with the inception and review of documents provided by SNV to gain a broader understanding of the background of the project and what had previously been accomplished. A further in-depth desk review was also undertaken for the Inception Report. Following this, three field visits in the selected provinces were carried out and the necessary data on

budgets and budget transfer collected. This data was then used to conduct a cost analysis and identify financing bottlenecks of decentralised rural sanitation during budget transfer. The last step was the analysis of this data and recommendations, which are presented in this final report. Following is a more detailed breakdown of the methodology.

#### Stage 1 - Inception and desk research

This stage focused on gaining a better understanding of the programme context, model and initial targets, aligning expectations for the structure and content of deliverables, ensuring all relevant materials were made available and agreeing on the proposed approach and the facilitation and inputs required from SNV to complete the financial analysis. The methodological steps involved inception and stocktaking, desk research and literature review and attending meetings and learning events. Following this, a structured work plan, summary of desk review findings and an *Inception Report* to be reviewed were produced.

#### Stage 2 - Field visit and primary research analysis

The aim of this stage was to deliver primary research and analysis to underpin the mission and gain an understanding of the costing, financial flows, budgets and their allocations for DRSSD. It involved the analysis of data collected from the desk review including compiling, cleaning and editing collected data as well as undertaking three field visits to the three provinces to interview key stakeholders involved in budget transfer and allocation to subnational levels.

#### Stage 3 - Assessment, field visit analysis and recommendations

To data collected both from the desk review and the field included:

- the resources and costs available to each level of government,
- the current allocations for sanitation budgets,
- the financial processes for functional budget transfer and the likely changes

under the district reforms flagged for 2020,

- the District Sanitation Plans (DSPs) and budgets in the target districts,
- the inputs necessary to improve decentralisation and deconcentration (D&D) implementation
- the needs and costs of sanitation promotion, capacity building, skill building and planning of budgets and trainings.

This were necessary to understand: (a) how budgets are allocated to districts, (b) to estimate costs for scaling up DRSSD nationwide (c) the cost implications to sub-national authorities and line agencies for the future nation-wide rollout of assigned functional transfer, (d) to document financial processes, (e) make recommendations for solutions to expedite planning, budgeting and

acquittal processes, (f) to conduct a cost-effectiveness analysis of the TS and (j) identify full costing of government spending to implement DRSSD to achieve 100% ODF status in all 161 districts (including a calculation of the growth rate), (k) to capture the lessons from the implementation of the financial guidelines, (l) a comparison of the annual percentage increase of RSSWH before the project's inception compared to subsequent years, (m) to identify bottlenecks from on budget transfer during the pilot project including a scheme of budget allocation and transfer, and (n) to develop a model for the scale-up of decentralisation of rural functional transfer nationwide.

#### Stage 4 – Reporting and validation

These findings were also shared at the NLE on DRSSD held in August 2019.



### 3. CONTEXT OF CAMBODIA

#### 3.1 Sanitation in rural Cambodia

A lack of sanitation is correlated with the transmission of diseases including cholera, typhoid and dysentery; and is estimated to cause 432,000 diarrhoeal deaths a year globally [3]. Not only does the provision (and use) of adequate sanitation services uphold public health, it also promotes dignity and safety - especially for women and girls - boosts school attendance [3].

Cambodia has recently experienced significant economic growth. The Cambodia Socio-Economic Survey (CSES) suggests that national access to improved sanitation facilities grew by 45% from 2007 to 2017, yet 24% (3.8 million people) did not have access to a sanitation facility, with that proportion increasing to 29.1% without access for the rural population [2]. This results in 26.2% still practising open defecation (OD), with the remaining 2.9% using unimproved facilities<sup>1</sup>. The Royal Government of Cambodia established the National Strategy on Rural Water Supply and Hygiene (RWSSH) in 2011 with the aim of reaching 100% sanitation coverage in Cambodia by 2025 [1].

Globally, it has become increasingly apparent that the provision of subsidies and hardware - from the Government, NGOs, etc. - are often not sufficient to instil the changes desired to reach the sanitation sector targets. Since behavioural shift is required to attain sanitation goals, efforts to advance sanitation access through the construction of latrines alone repeatedly go wasted [7].

Using the Community-Led Total Sanitation (CLTS) approach, a trained facilitator creates a rapport with the selected community before undertaking a range of participatory activities which 'trigger' the community into understanding why it is unsanitary and unsafe to practice open defecation. Through CLTS, 'triggered' people are more aware of and motivated to change their behaviours [7].

It is necessary to provide the population with a cheap, yet desirable access to sanitation hardware. Viewing the community as a consumer, rather than a beneficiary also means the market and value chain increases and a better service is provided. Some organisations that are working on this are WaterSHED with their 'Hands off' sanitation marketing model and iDE with its Sanitation Marketing Scale up (SMSU) [8].

Through such approaches, open-defecation free (ODF) status be achieved at a much quicker rate and on a much larger scale, and reduced cost to the Government. Instead of spending a lot of finances directly on latrine materials and construction, a smaller amount needs to be provided for implementing CLTS or Behaviour Change Communication (BCC), improving the market, and subsidising costs just for the most impoverished families.

However, there is a lack of accessible finances at the subnational level, and a necessity for more public funding to be available to generate further demand for sanitation services and to strengthen the market.

#### 3.2 Decentralisation & Deconcentration

Decentralisation is the transfer of authority from the central to local governments, and deconcentration is the process by which responsibilities are transferred to lower levels within its jurisdiction [9]. This creates an effective and dependable management system, enhances local development, warrants the rights of the local population to have a voice in decisions and better protects minorities. To attain this, local governments need to have adequate resources and self-sufficiency. [10].

Functions such as sanitation are better planned for at district-levels as they offer an opportunity to implement new management schemes. Furthermore, by more power being in the hands of the governmental body that is closer to the people it serves, their needs can be heard and

---

<sup>1</sup> The data used in the model is not comparable to the Government data, as the official data does not include access to sanitation data at local levels. A statistical modelling exercise was used to obtain level of access to sanitation at district levels.

---

activities can be administered to meet demands [11].

Decentralisation comprises the gradual transfer of roles, responsibilities and resources from the provincial to the district and commune levels, so that sub-national governments can implement suitable interventions more effectively.

The Cambodian Government has a longstanding commitment to decentralisation, however, some challenges remain [4]. For example, the Commune Councils (CCs) budgets are being spent on physical infrastructure (notably roads) and less on social services, with slow progress in the assignment of sanitation functions, leaving the District Administrations and communes without adequate funds to make sufficient progress [12].

The Government has had its own subnational development programme since 2001, when the National Assembly approved the Law on the Administration and Management of Communes, which can be broken down into 3 phases, as below:

#### Phase 1- Re-establish Communes

- Communes have a role to support the local community
- They are accountable for service delivery to the people
- A commune is an independent body elected by the people every 4 years
- The EU invested in capacity building for communes and local government strengthening under the Seila programme (launched in 1996)

#### Phase 2 – Advance social development programme for sub-national level

- Understanding the importance of their roles, the Government set up the Commune Investment Programme (CIP) to implement projects in Communes
- It is the decision of the Commune to decide which project is best to work on/fund via public forums (i.e. schools/roads/ponds, etc.)
- The idea was for the local government to demonstrate that they perform service delivery

- All the money comes from MEF directly with no filtration
- District level has its own fund
- When the MEF plays with the budget it goes through the treasury via direct transfer – not related to any ministry

#### Phase 3 – Functional transfer of rural sanitation (and other sectors)

- The World Bank (WB) supported this phase from the beginning (2014) to implement functional transfer
- This means that the Government has witnessed the performance of the local government and their accountability, and recognise that they are closer to the local people so are more aware of their issues
- The Ministry formerly was holding most of the service delivery functions and budget, some of which are better implemented by the commune and districts
- Important questions were asked such as: what are the functions of the line ministry that could be transferred to the subnational level?
- 2014 ADB assessment notes that the MRD and the other 19 ministries agreed to review functions at ministry level [13].
- List of services initially agreed by the MRD as its sole responsibility:
  - Setting and developing policy, strategy and institutional framework
  - Developing technical capacity at local level
  - Research
  - Monitoring progress towards national goals
  - Establishing obligations and incentives for its technical departments to play a constructive role in reform process.

#### 3.3 DRSSD Pilot Project

This summary of the DRSSD pilot was provided by the SNV's draft learning note 'Decentralisation of sanitation and hygiene promotion services: Lessons from Cambodia':

#### Overview

From mid-2015, the World Bank Group began a partnership with the MRD (which holds the

mandate for rural sanitation) and the National Committee for Democratic Development (NCDD) for a two-year pilot project to test how the responsibility for rural sanitation and hygiene promotion could be decentralised to the District Administration (DA) within 10 districts (2 provinces) and, in the process, assist in advancing progress towards the national sanitation targets.

The TS for the DRSSD pilot was split into two phases:

Phase 1: June 2015 – June 2016

Phase 2: Support to districts ran from May 2018 – June 2019. Project end date – 30 September 2019.

Between phases one and two there was a two year period of no support. However, there was a work plan developed for July 2016 – 2017 to describe how the MRD would support roles (instead of TA).

Selection criteria for the two provinces (Kampong Speu and Tboung Khmum) was based on:

- A dedicated commitment to participate from the DAs
- A minimum of 2,000 poor households per district
- The availability of local suppliers of construction skills and materials for low-cost latrines
- The absence of ongoing top-down sanitation interventions led by the Provincial Department of Rural Development (PDRD)

The World Bank contracted SNV as a TS agency for the first year of the project to help strengthen the capacity within the 10 districts and engage with the government at provincial and national level to share emerging lessons and rectify operational challenges. In the second year, the PDRD and Provincial Administrations (PAs), with assistance from a national Joint Technical Working Group (JTWG) (later renamed as the Functional Transfer Coordination Group – FTCG - in Phase 2) appropriated responsibility for TS and guidance to the districts. The support from the national government was essential so that the pilot was recognised as a strategic

decentralisation initiative, not just a one-off experiment funded by development partners.

Since this was a pilot, the government made no permanent transfer of functions at the beginning. Instead a *Prakas* (decree) was issued by the MRD, along with an agreement between with MRD and the target districts, which delegated responsibility for rural sanitation and hygiene promotion to the participating districts for the duration of the pilot. Since the pilot was short and DAs were taking on responsibility for sanitation for the first time, the emphasis was put on establishing local management structures, planning and developing the capacity of local actors at the district and commune levels. Targets for increased access to sanitation were provisionally set at 7% per annum (later increased to 10%).

For an overview of the pilot see **Figure 1**, its key activities including:

- Building political support at national level and establishing a joint steering committee
- Developing resources such as:
  - Outlining the functions to be adopted by the DA
  - Options for funding and implementation
  - An operational manual with associated training tools
- Setting national and local resources in motion and trying out a mechanism for the transfer of central funds for sanitation and hygiene to DAs
- Testing plans via capacity building support and guidance for local government agencies, setting up mechanisms for sanitation planning, coordination and monitoring at district level and supporting promotional activities in selected communities
- Documenting and sharing lessons learned (all levels)
- Creating a roadmap for scaling up

#### Results of the pilot (phases 1 and 2)

The pilot successfully tested the functional transfer of responsibility for sanitation and

hygiene promotion to districts, with more than 1,500 villages reached and over 12,000 latrines constructed within the first 6 months of the project, amounting to an average increase in access of 5.1% per district. By May 2017, this percentage increased to 9.8% – very close to the pilot’s target. Aside from the physical outputs, the major success was the high level of commitment to sanitation and hygiene promotion and the obvious potential of these bodies to execute their new functions with great effect. A first transfer of funds was also made in early 2017 (USD\$350 per district for one year) and delayed. Since this was small to enhance local implementation capacity, the pilot had to depend on TS and Commune Council for Women and Children (CCWC) budgets. However, this first transfer set a precedent, such provisions having the potential to be extended to support decentralised sanitation systems in other districts. The key findings of phases 1 and 2 are outlined as follows:

- At present there is a commitment to decentralisation at the political level but not within technical departments
- Districts and communes can take on sanitation functions using existing HR, but require training, guidance

and operational functioning to guarantee working results

- Efficient governance and management at district level are crucial
- The MRD retains an important role in providing technical support
- The financial transfers that were made from the ministry to the pilot districts were inefficient

Key lessons that emerge are as follows:

1. District and Commune Administrations can take on rural sanitation and hygiene promotion functions effectively
2. High-level political support is necessary; having a champion at both political and technical level that understands decentralisation as an opportunity to reach results faster is imperative
3. District and commune staffing levels can play a useful role in sanitation and hygiene promotion and this requires effective leadership and coordination at district level

Figure 1, provides an overview of each phase of the pilot.

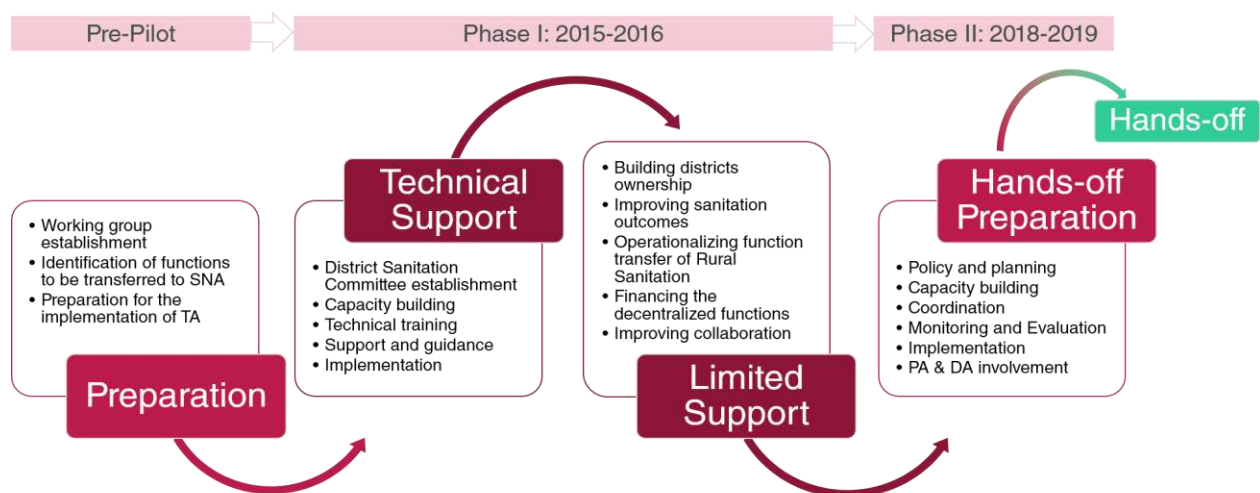


Figure 1 - DRSSD Pilot overview, Sevea 2019

## 4. DECENTRALISATION OF SANITATION IN CAMBODIA: FINANCIAL ANALYSIS

As a result of the DRSSD pilots, the processes and guidelines for decentralised sanitation service delivery have been updated to provide a canvas for its continuation in Cambodia. **Figure 3** outlines the activities during the first and second years of the pilot project, which include those listed in Annexure B as 'DRSSD promotional activities' throughout the report. The following section uses information from reports provided by SNV.

### 4.1 Description of activities

#### Governance and management

The first year of the process is mostly focused on creating the appropriate structure to enable decentralised functions in the training, reporting and reviewing of sanitation activities to be owned by SNAs from the second year on. This structure revolves around the establishment of a District Sanitation Committee (DSC) constituted of members from provincial, district and commune staff. All sanitation activities will be monitored by this committee, who will appoint a Sanitation Focal Person, the District Sanitation Officer (DSO), to take the lead on planning, training, meetings and implementation activities. Following this establishment phase, the committee can carry on with the district orientation planning and developing district Sanitation Plans and assess the progress made throughout the year by organizing events with stakeholders at Provincial or National level, or exchange visits across provinces and districts to share good practices.

#### Monitoring

The primary action to ensure effective monitoring of the advancements in sanitation access are to evaluate the district's initial situation and thus establish a baseline to compare to. From this baseline, Sanitation Profiles can be developed and used to track the progress of each district. Information gathered from Sevea's field visits demonstrated that the monitoring will include frequent data updates, starting at the commune level, wherein logbooks are distributed at the villages to fill in. Following this, commune and district representatives will gather to form the DSC to discuss and process the

data in quarterly meetings as well as to revise the situation as necessary. Lastly, this will be reported to the provincial level for general gathering and analysis of the data collected at each level.

#### Implementation

In order to reach ODF status, key implementation actions based on facilitating behavioural change are carried out. This is done through a combination of sanitation demand creation at village level, sanitation suppliers' identification and their linkage with interested villagers. Districts are also taking action directly at commune or village levels by interacting with households.

#### Capacity building

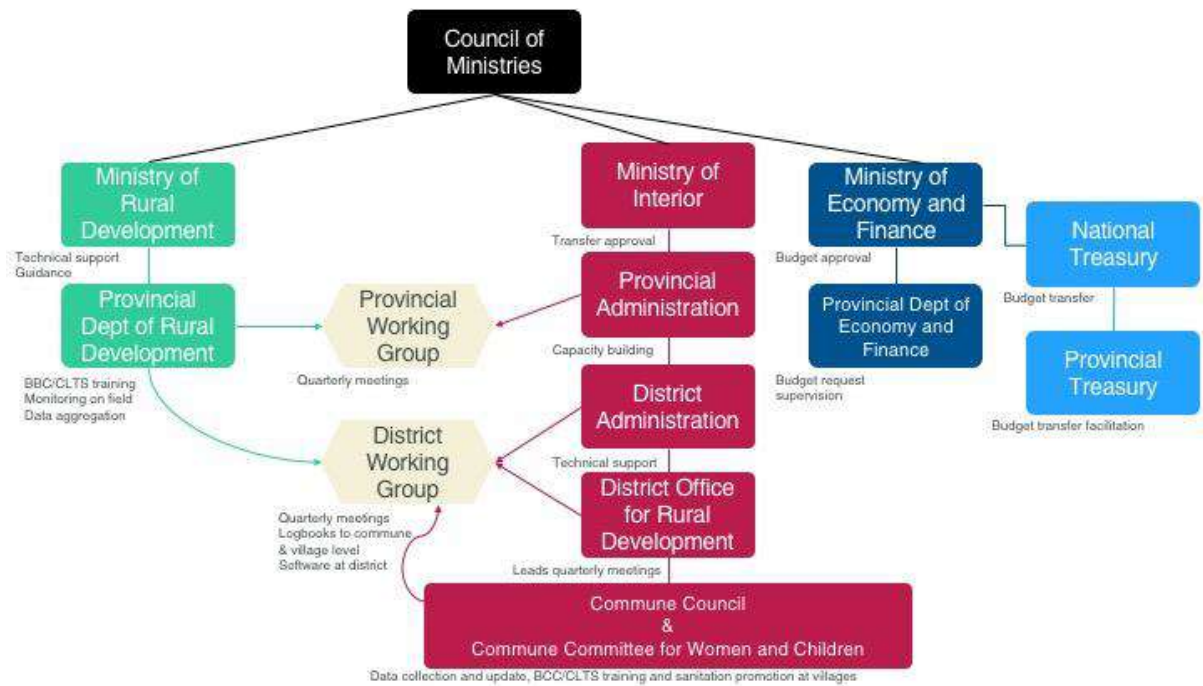
An entire capacity building and training programme was developed by the DRSSD TA/TS team in conjunction with provincial counterparts to support the new responsibilities. To begin with, capacity assessments on the following categories: budget and planning, technical skills, monitoring, coordination, management of resources are conducted. Following these assessments, trainings such as BCC, M&E and reporting are run at the district level. At provincial level, Training of Trainers (ToT) is also performed. They undertake training in facilitation skills, sanitation demand creation, financial management and reporting, as well as in accounting and procurement. Trainings can be spread out over the first year of the decentralisation process and must be followed by refreshers, once or twice a year. Those trainers are then in charge of training district levels.

### 4.2 Roles of each actor

Decentralisation responsibilities are developed by the NCDD-S within the Ministry of Interior (MOI) as outlined in the operational guidelines for DRSSD [14]. For sanitation, the MRD has identified several functions to be transferred to SNAs. As sanitation functions were previously primarily assumed by the PDRD but are now split between the MRD and its subnational level for strategy and content and the MOI and its subnational levels for implementation and follow-

up, during the current transition phase, roles of each subnational department had to be reviewed

and defined as further described in the following sections.



**Figure 2 – Stakeholders, relationships and simplified roles of each governmental actor, Sevea 2019**





**Figure 3** - Description of DRSSD promotional activities during the pilots, Sevea 2019

### At National Level

#### Ministry of Rural Development

The MRD's responsibilities in the sanitation context entails developing policy strategy instruments, guidelines and tools for the continuous implementation of DRSSD. It also includes the formulation of relevant capacity building materials related to rural sanitation and coordinate and mobilise resources for the sector at national level. And to advocate for strong political support, lead sanitation related research and development and monitor and evaluate progress of rural sanitation at the national level [15].

### At Provincial Level

#### Provincial Working Group (PWG)

At the Sub-national level, the PWGs - led by the Deputy Provincial Governor – were established in each province to assist in the decentralisation process and to cooperate and collaborate in effective resource mobilisation for all sectors. They are composed of members from the following departments, who have quarterly meetings: PDRD, Provincial Department of Religions and Cults (PDRC), Provincial Department of Education Youth and sport (PDOEYS), Provincial Department of Health (PDOH), Provincial Department of Environment (PDE), local development partners and NGOs.

#### Provincial Administration, represented by the Deputy of Planning and Implementation

The PA provides administrative support in sanitation to SNAs, pushing the progress of the sanitation agenda, supporting monitoring and reporting activities at this level. They also support the sanitation budget plan preparation by advising districts and communes on how to obtain funds, information about local or international donors and how to allocate social service budget. They lead quarterly meetings which includes the collection of data and reports from logbooks filled out at the village and commune levels (which have been updated at the district level) to then be reviewed for the provincial report – usually consisting of one visit per month per district. They also coordinate capacity building for the districts and ensure the

right technical support is provided to districts, monitor the performance of the district using agreed indicators and benchmarks, develop incentive systems to recognise the districts, facilitate cross-district learning in collaboration with the PDRD and generate political support at the district and commune levels for rural sanitation service delivery [15].

#### Provincial Department of Rural Development

The PDRD provides BCC and CLTS training to subnational levels, leads quarterly meetings and collects reports coming from subnational entities (usually one visit per month per district). In terms of support activities, the PDRD helps the DORD and District Administration (DA) and communes to prepare schedules for sanitation work plans. They also help the MRD to implement sector policy and strategy documents in the province, lead capacity building for the sanitation private sector, provide technical support to the districts in relation to the sector and support the implementation at the community level for quality assurance.

#### Provincial Treasury (PT)

The PT acts as a public accountant for the SNA, facilitates budget transfers and provides information about the overall budgeting processes. They receive budget transfer requests from the National Government targeted for the districts and help the latter fill budget request forms. Once the requests are approved by the PDEF, the PT transfers the funds from the provincial to district budget.

### At District Level

#### District Administration

The DA, led by the District Governor, supports all activities related to DRSSD: quarterly meetings, budget planning and capacity building. Within the DA, two main offices are now in charge of pushing forward the sanitation agenda, illustrated by the Cambodia RWSSH sector improvement support synthesis report from the World Bank: developing district-wide sanitation planning with close collaboration with CCs, developing an incentive system to recognise the performance of field implementers, coordinate



the partners executing rural sanitation for effective enactment such as the private sector, NGOs and Microfinance Institutions (MFIs). They also monitor rural sanitation process in the district and identify necessary corrective measures, mentor and coach field implementers for capacity strengthening, facilitate cross-commune learnings to replicate success across the district, scope out the private sector in the district in collaboration with CCs and the PDRD for capacity and partnership building and lastly, administer a pro-poor sanitation subsidy programme in compliance with the MRD's guidelines [15].

#### District Office for Rural Development (DORD)

Under DA, DORD conducts technical training, leads quarterly meetings, and implementation activities. The reform to switch from under MRD to under MOI is anticipated for next year, where the DORD will be more involved in the process of decentralisation, as before the information and assistance were passed from MRD to PDRD and then to communes, without much involvement of the district level.

#### District Sanitation Officer

Under the DA, the Sanitation Focal Point (most of the time the Inter-Sectoral Chief Officer), oversees the usage of the social service fund at district level and therefore works closely with the Commune Council for Women and Children. With decentralisation, they have seen their role demands increase and will now take on responsibilities as Sanitation Focal Points at the commune level too. This function consists of leading all technical training, quarterly meetings, budget planning, implementation activities and MIS updates. The DSO's main responsibilities are to control all documents about sanitation at the commune level, to plan sanitation activities every year, create budget plans for the commune, to visit on field and support commune staff (at least once a month per commune), and to update monitoring results via MIS. These results are then transmitted to the PDRD, with PA in copy. They undergo refresher trainings once or twice a year.

#### District Department of Finance (DDOF)

Supports the financial transfer process, in this instance, chasing budget requests for sanitation.

#### District Sanitation Committee

This working group is composed of:

- District Governor (or their Deputy)
- Inter-Sectoral Chief Officer
- District Education and Health Office Directors
- District Women and Children Committee's Chief
- District Officer of Rural Development
- Representatives of the CCWC from each targeted commune

It takes on the responsibility of on-field activities such as establishing baselines in the target communes, using specially designed logbooks, BCC and CLTS training and refreshers to the district and commune stakeholders, financial and data management, monitoring and evaluation training for provincial, district and commune personnel, peer learning across Districts and provinces through meetings and exchange visits, MIS updates by the DA and commune level, and forming Sanitation Plans.

#### At Commune Level

##### The Commune Council

The Commune Council are made up of key figures within the community such as the Chief of Village and the Chief of Commune. Their main responsibilities are to provide inputs for district-wide sanitation planning and align it with the commune development plan based on the normal commune planning process, implement the activities as per sanitation district plan including conducting the 'triggering' and behaviour change communication sessions, coordinate with the private sector to deliver sanitation products and services, report data to the district level on coverage access and to prepare and verify lists of poor households eligible for subsidy [15].

##### Commune Committee for Women and Children

Under the CC, CCWCs are responsible for using the social service fund, in charge of conducting sanitation demand creation in villages and promoting the benefits of proper sanitation. They do this through BCC and CLTS training at village level, for all villages in their commune. They also collect village sanitation data every 3 months through logbooks. They perform sanitation promotion by using some activities combined

with other Women & Children’s social sensitisation.

### 4.3 Budget

Based on budgets from the SNV pilot project and the 15 districts Activities and Budget Plans 2019-2023, the nature of costs related to the pre-ODF DRSSD promotional activities conducted within the pilot project were identified and divided into two main categories: fixed and variable costs. For a comprehensive list of these costs and their categorisation please see **Appendix B (Table 8)**.

#### Fixed costs

The term fixed cost refers to the part of costing within the decentralisation model that remains

identical for all levels of government, independently from their size or the initial status of each entity. After listing the activities during the pilot project (i.e. meetings, capacity building trainings, training materials, etc.) and classifying them according to the year on which the activity was carried out (first or second year of Phase I/first year of Phase II), the Administration responsible was identified. Concerning the National costs, it is important to note that this estimation doesn’t include the necessary government subsidies for assisting the ID poor 1 and 2. Combining the different costs, the annual fixed cost per administrative level is summarised in **Table 1**.

**Table 1** – Estimations of DRSSD + ODF verification yearly fixed costs at each level of administration based on DRSSD pilot costs, Sevea 2019

Estimation of yearly fixed costs (USD\$) at each level of administration based on DRSSD pilot data				
Costs based on DRSSD pilot. ODF verification and re-verification costs from NAP II. Does not include CapEx or inflation				
Classification	Commune	District	Province	Government
2020 - 2021	\$0	\$9,105	\$648	\$0
2021 - 2022	\$0	\$6,862	\$624	\$0
2022 - 2023	\$0	\$6,285	\$624	\$0

#### Variable costs

From the list of pre-ODF DRSSD promotional activities provided by SNV during the TS for the decentralisation process, several activities for the HR costs<sup>2</sup> were merged into the category “*DSA and Accommodation for PDRD and District WASH officers (rates as per government procedures) and commune committee members participating in workshops and trainings*” as well as transport costs and monthly allowances for DSOs. This costing information was gathered from literature provided by SNV including:

- ‘Summary of implementation and TS provided 2015/16’
- ‘Introduction to work plan and costings for 2016/17’
- ‘Work plan and schedule, Inception report, 2018’
- ‘Beyond 2017 scenario, work plan expansion model’
- ‘13 districts Annual Sanitation Plan 2019-2020’

Once the activities and their costs were associated, the following actions were conducted:

1. Break down of the costs per activity to identify the number of provincial staff and sanitation promoters that receive these allowances
2. Identify the location of each activity (where the related events took place: outside the province, at province or district level)
3. Split the activities between first and second years of implementation of the Pilot Project, depending on the number of districts that participated in each event: if only the 5 new districts were concerned, the activity took place only within the first year, if not, the activity took place during both years.

<sup>2</sup> HR was assumed to be sufficient and following the NAP II costing, salaries for each SNA member were not taken into account

Different monetary allowances were given to support sanitation activities within the pilot project (as demonstrated in **Table 2**) depending on where the event would take place (coinciding with indicators given by SNV rather than the current allowances given by the Government) due to the different costs associated with admin

and resources required for an event at each level (provincial/district etc.) Further to this, different costs were also given depending on which level of staffing would attend (provincial/district etc.) National staff costs were not included as they are not necessarily involved in the events illustrated (apart from the NLE and JTWG/FTCG meetings):

**Table 2** - Staff allowances by type of event based on DRSSD pilot costs, Sevea 2019

Staff allowances by type of event based on DRSSD pilot costs (USD\$)				
Event location	Classification	Event at Province	Unit	Transport
Province	Province Staff	\$ 6	Day	-
	DSO	\$ 19	Day	-
District	Province Staff	\$ 22	Day	-
	DSO	\$ 6	Day	-
Another province or PHN (gov. rate)	Province Staff	\$ 34	Day	\$ 15
	DSO	\$ 34	Day	\$ 15

To estimate the yearly variable expenses, the number of events (see **Appendix B - Table 8-** for explicit list) that took place in the first year at the national, provincial or district level, and the number of staff members required from each Administration were totalled. Next, the number of days of events (depending on the number of districts or province staff) was multiplied by the cost given for one day for each staff member, and by the number of staff required per event (depending on the number of sanitation

promoters in the districts, which itself relies on the number of communes per district). The travel costs (for when the staff travelled outside the province) were also added on. While looking at activities paid by communes, it appeared that the only factor defining the cost was the number of villages within the commune. The average cost per commune was therefore computed, indicating the cost a commune should bear for each village within its borders.

Estimations of yearly variable expenses of every administrative level based on DRSSD pilot costs (USD\$)												
Costs based on DRSSD pilot. ODF verification and re-verification costs from NAP II. Does not include subsidies or inflation.												
Classification	Commune			District			Province			TS	Government	
	Min	Average	Max	Min	Average	Max	Min	Average	Max	per district	per province	per village
2020 - 2021	91	791	3,009	496	2,071	4,464	882	5,143	9,698	3,439	2,766	500
2021 - 2022	91	780	3,009	424	1,756	3,816	1,045	5,704	10,450	3,439	5,750	500
2022 - 2023	91	751	3,009	424	1,725	3,816	220	1,128	2,200	0	570	500

**Table 3** -Estimations of DRSSD + ODF verification yearly variable expenses of every administrative level based on DRSSD pilot costs, Sevea, 2019

#### Total costs

The total cost is the sum of all expenses for all administrations, both national and subnational for the decentralisation model only in terms of the DRSSDD promotional activities. By adding the variable to the fixed costs it was possible to

estimate the total cost paid by each stakeholder. Since the pilot project included two years of TS it was assumed that only two years of TS would be given when it came to scaling up too. This decision to limit the TS to a two-year basis arises from past experience; it was seen that the effects

of the TS have a cumulative and long lasting impact even after the activities have ended. It was assumed consequently, that the two years of external TS is sufficient and that if continued support was required it would be minimal and could therefore be provided by the Government (who would have had capacity training on how to do so). The equations found were then used on the 161 districts composing the sample. The table below describes the results obtained by using the

above-mentioned formulas to estimate the costs which will occur in the years 2021, 2022 and 2023 for performing each sanitation promotional activity. National costs cover refresher trainings at national level, ToT, ODF verification and subsidies, however, the financial analysis does not include costs for subsidies. The costs for ODF verification and re-verification are the same as those calculated in the NAP II analysis, which were provided by UNICEF.

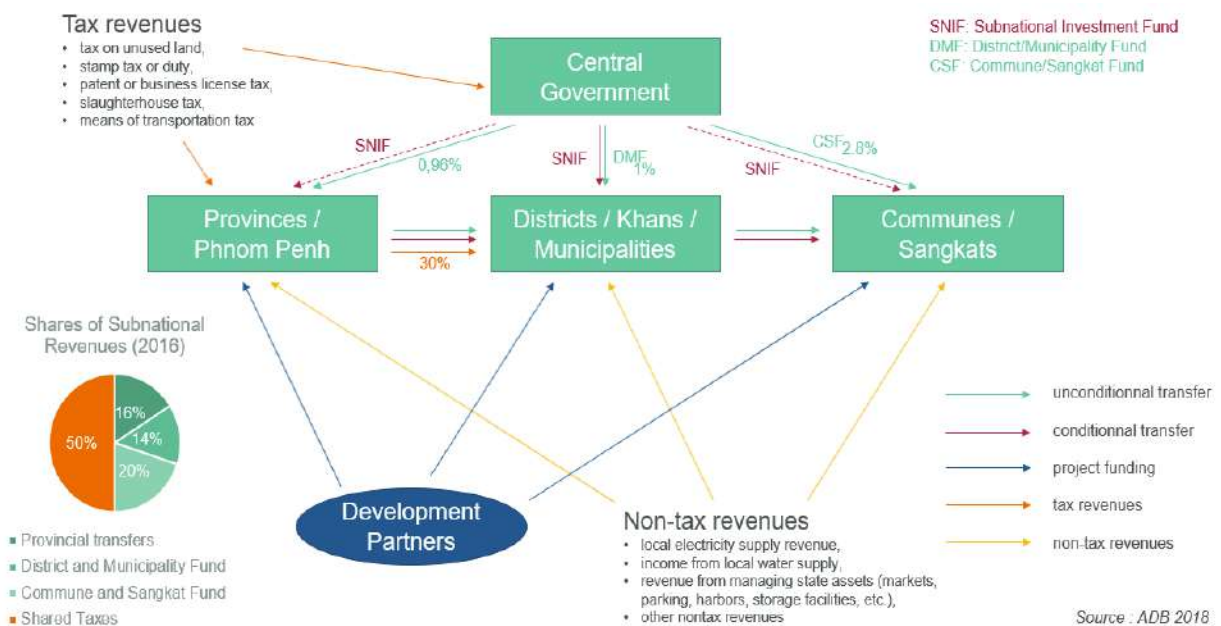
**Table 4 – Estimation of DRSSD + ODF verification expenses for each level of administration based on DRSSD pilot costs, Sevea 2019**

Estimation of total expenses for each level of administration based on DRSSD pilot (USD\$)												
Costs based on DRSSD pilot project. ODF verification and re-verification costs from NAP II. Does not include subsidies or inflation.												
Classification	Commune			District			Province			TS	Government	
	Min	Average	Max	Min	Average	Max	Min	Average	Max	per district	per province	per village
2020 - 2021	91	791	3,009	9,601	11,176	13,569	1,230	5,791	10,346	3,439	2,766	500
2021 - 2022	91	780	3,009	7,286	8,618	10,678	1,669	6,328	11,074	3,439	5,750	500
2022 - 2023	91	751	3,009	6,709	8,010	10,101	844	1,752	2,824	0	570.0	500

## 5. DECENTRALISED SANITATION: SOURCES OF FUNDING & FINANCIAL PROCESSES

The main categories of funding sources for all levels of administration are tax revenues, non-tax revenues and policy and project funding by development partners. Concerning sub-national Administrations, another addition are public fiscal transfers, either conditional or non-conditional transfers from the central government or higher Administrations. Those transfers are framed into three fund entities: Subnational Investment Fund, district/municipality Investment Fund, and

Commune/Sangkat Fund, which are all measured as a percentage of the national revenues and based on criteria such as poverty rate, population and administrative provision [16]. The Legal and Regulatory framework for Tax and non-Tax revenues states that all revenues should be shared between provinces and the capital city, with further sharing of property taxes for sangkats (20% of Phnom Penh tax revenues), khans (10% of Phnom Penh tax revenues) and districts (30% of province tax revenues).



**Figure 4 - Funding sources for sanitation in Cambodia, ADB 2018; Sevea 2019**

### 5.1 Sources of funding & expected use of proceeds

For the decentralisation of sanitation, individual funding is required for each actor to finance their specific activities (outlined in the previous section). **Table 5** indicates the sources of each actor's funding (i.e. the Commune Development Fund) and a minimum and maximum amount of

what they require based on the budgets calculated in the pilot project. This way it is easier to see how much support each needs, what the sources of funding might be and how the budgets should be distributed.

**Table 5 - Sources and amounts of funding for each level of administration and TS, Sevea 2019**

Actor	Source of funds	Amount available (USD)	Budget needed per Year (USD)		Gaps
			Avg.	Max.	
Commune	Social Service Fund	1.5 – 2K	0.8K	3K	Social service fund would cover the cost for sanitation in each area Extra support required for pro-poor subsidies
	Commune Development Fund	35 – 73K			
	Development partners	-			
District	Social Service fund	1.5 – 2K	11K	13K	The specific budget to support sanitation is small (USD\$350-700)  District will need extra funds (USD\$8 – 13K) to be able to achieve 100% access to sanitation
	Sanitation budget from MRD	350– 700			
	District Development Fund	35 – 100K			
	Development partner	-			
Provincial	National Fund	-	5.7K	10.3K	They have package for overall expenses rather than specific budget for sanitation  Specific budget allocation to support one district to reach 100% coverage is around USD\$2-3K
	MRD sanitation development	-			
National	Development partner	-	Cost to do ODF verification		This has so far been paid by a development partner
	National Fund	-	-		Information not available
TS	Development partner	-	3-4K		

### National Budget

The National Budget is a statement of a government's planned expenditures, which allows it to assess whether or not it has sufficient funds to meet its expenses. It gives authority to

the Executive to collect revenue to spend in the aim of achieving the Government's objectives such as poverty reduction and economic development. The budget is the most important instrument of the Government, allowing it to carry out its policies; the associated decisions



having an impact on all social and economic activities of a country. In Cambodia, the National Budget is prepared annually for implementation in the following calendar year (coinciding with the fiscal year). It is organised by the Government but needs to be approved by the National Assembly and the Senate before it can be implemented. After receiving legislative approval, the National Budget becomes law, being mainly governed by the Law on Public Finance Systems, paving the way for further improvements and transparency [17].

## 5.2 District and commune development funds

The existing development funds for districts and communes are split into the following three categories:

### 1. District Municipal Funds (DMF) and Commune Sangkat Funds (CSF)

These are given by the Government and are different to the district and commune Development Funds, which are part of the district budget. These investment development funds range between USD\$35-50K depending on the size of the community (25% of the total annual budget). They are split into two sections, where money can either be used for infrastructure or capacity development. However, most of the money is spent directly on infrastructure such as schools, hospitals or roads as this is much more straightforward to request a budget for and tends to run more smoothly in general, as it has a clear budget plan. For capacity building and operational costs, each district/commune would receive USD\$6-15K per year (2-5% of the total annual budget) for meetings, going on the field and trainings. Part of this could be allocated for sanitation.

Alongside DRSSD, the Minister of Interior Mr. Sar Kheng proclaimed recently that, in response to public needs, development budgets will more than double for each commune from USD\$35K to USD\$73K in 2020 (aside from administrative costs) and more than triple by 2023, reaching USD\$110K. He said this decision has already been approved by Prime Minister Hun Sen and the MEF, acknowledging that they need to “enable the Commune Administration, which is closest to

the people, to have the budget to develop their local areas according to citizens’ needs” [18]. Part of this will be a conditional fund, meaning a certain percentage of the budget has to be spent on sanitation.

### 2. District & Commune social service funds

This is owned by the commune or district and managed (planning and implementation) by the CCWC. This goes towards helping to support the society in terms of disasters, women and children, births and babies and capacity building for health education and hygiene promotion. This section works closely with health care centres and schools. It is only a small fund of about \$1.5-2K per year. During the pilot project \$250-500 of this fund was given to support sanitation service delivery.

### 3. Fundraising support

This is used when a community wants to build something smaller for the commune like a well or a pond. The community can ask the Pagoda for help in doing this, but funds raised tend to not amount to that much.

### Functional transfer budget

For the decentralisation process, an initial transfer from the central government to the PT (then later to the districts) was made in early 2017 of USD\$350 per district for sanitation for the year (less than 1% of the overall development fund). Although small, the money was not intended to cover all the costs for the project, but more as a way of encouraging districts and communes to spend more of their DMF or CSF on sanitation service provision. The first transfer set a precedent meaning such a procedure could potentially be broadened to support decentralised sanitation and hygiene promotion programmes in other districts. In the following year, the budget for transfer increased to \$700 per annum for each district, however this was still too small to boost local implementation capacity.

## 5.3 Development Partner Funding

The Development Partner Funds play an important role in financing either direct projects or specific projects and programmes. Since the compounds of the total Official Development Assistance (ODA) distribution have changed

significantly between 2014 and 2018, there has been an advancement in funding modality as well, with four different modalities being established: investment projects, technical cooperation, emergency aid and budget support. The first two modalities require the most money as they involve funding for physical infrastructure and supporting government reform and service delivery. In 2017, most of the funding from NGOs went towards Health, Education, Community Welfare, Rural Development, and Agriculture, while the Development Partner Fund was provided for works in the Governance, Health and HIV/AIDS sectors. Again, in 2017, it was recorded that the sectors that have most effectively increased Private Sector Development (PSD) to a substantial financial amount are agriculture, energy and water/sanitation [18]. The Development Corporation and Partnerships Report prepared by the Council for the Development of Cambodia (2018) claims that the total ODA distribution from 2008 to 2016 to be spent on the water and sanitation sector per year was USD\$39.5 million [18].

It should also be noted that the reporting on expenditure is not comprehensive given the amount of off-budget Development Partner Funding and contributions by NGOs, which tend not to be recorded thoroughly [19].

#### 5.4 Mission package

Each department of the SNA has a predefined budget allocated to a 'mission package', which aims to cover the allowances needed by the members of the department to reimburse their personal expenditures on a given mission. To claim back allowance, a government agent needs to show an official invitation letter testifying his participation in the activity.

#### 5.5 Use of proceed and additional budget required

The MRD allows a section of its budget to be allocated for decentralisation costs such as mission allowances, capacity building, design of support tools, TA, ToT and review of sanitation plans.

Similarly, delegating a fraction of its own budget to sanitation, the PDRD can adopt the costs of the

TS, M&E and ODF verification. This fund is used for operational costs since there is not yet a percentage of money intended for sanitation, but is rather provided as a package for the whole department. It should be made mandatory that this fund equates to the amount needed for TS for sanitation). Based on the pilot, the budget required for this is between \$5.7-10.3K.

The district budget comes predominantly from the district/municipality Fund and can be utilised for capacity building and training for committee members on budget planning management, M&E and MIS updates. The other sources of funding are the Social Service Fund, the sanitation budget from the MRD and the Development Partner Fund. It should be made mandatory that 5-7% of the total fund is used for capacity development (quarterly meetings, M&E, etc.) The budget needed, based on the pilot, is between USD\$11-13K per year to reach 100% sanitation coverage.

As part of the Commune/Sangkat Fund as well as the Development Budget, the Social Service Budget covers activities of implementation, monitoring, data collection as well as triggering, BCC and CLTS trainings to be utilized within villages. Funds from development partners should be allocated to add to demand creation and pro-poor subsidies. The communes require USD\$0.8-3K a year to reach 100% sanitation coverage. And so, if they were to plan their budget just from the social service fund (USD\$1.5-2K), this would more or less allow them to cover all the costs of sanitation in their area. However, extra support is still necessary for the pro-poor subsidies. For more information on funding sources and their amounts, see the conclusion and recommendation section of this report, which includes a table illustrating the location and amounts of funds at each level.

#### 5.6 Annual budget planning, allocation and usage cycle

Taken from the Draft Law on Financial Regime and Property Management for Sub-National Administrations (2012), it is shown how the budget strategic plan and budget plan of the SNA is annually prepared by the Governor and approved by the Council, in accordance with the



process outlined by the MEF, abiding by the following calendar:

#### 1<sup>st</sup> Quarter (January to February)

Budgets authorised from the previous year are distributed. The allocation of the money could be altered such as in the case of a sudden disaster that occurs after the budget has been requested, however the original amount requested could not be changed.

#### 2<sup>nd</sup> Quarter (March to May)

Preparation of the budget strategic plan wherein all ministries, institutions and entities inform each Council about programmes and budget projection in their sector that need to be implemented in each Council's jurisdiction.

#### 3<sup>rd</sup> Quarter (June to September)

The MEF prepares instructions for the SNAs on the techniques for budget plan preparation. In the instance that the MEF finds that any budget plan deviates from the principles of legality, they will inform the Governor of the SNA to revise their plan. For a budget to be transferred in the first quarter of a year, the districts have to make a request at the beginning of the 3<sup>rd</sup> quarter of the previous year (i.e. to have a budget transferred in January 2020, they should file their request in July 2019).

#### 4<sup>th</sup> Quarter (October to December)

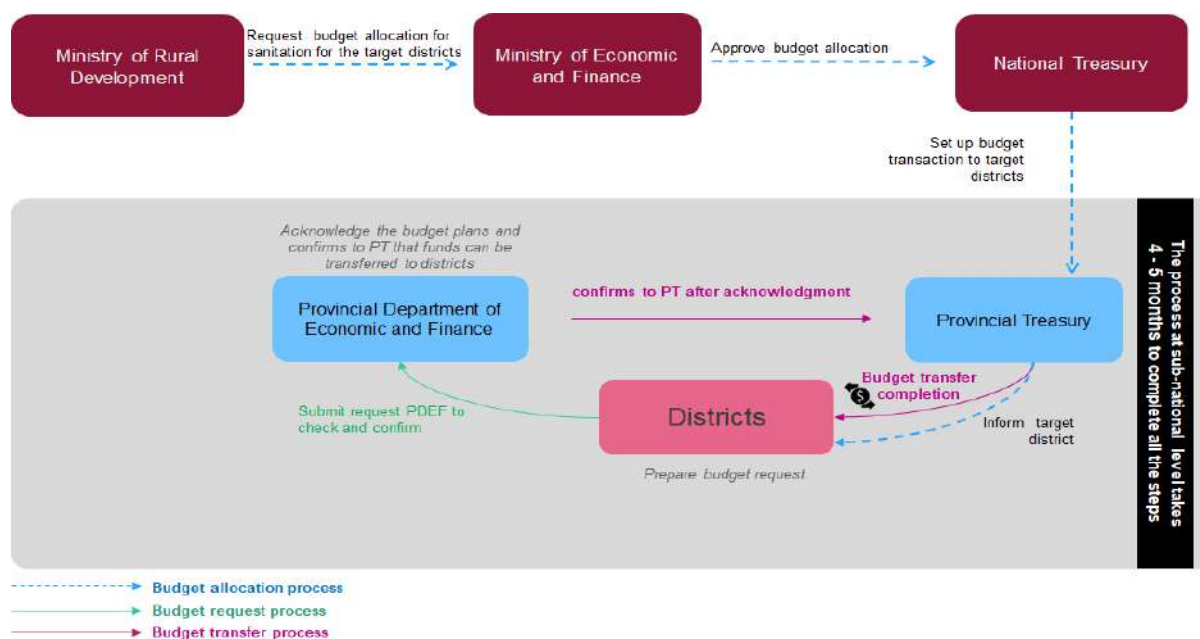
Adoption of the budget for the SNAs, wherein the MEF submits the budget plan to the Council of Ministers for review and approval with further submission to the National Assembly (in November) before submitting it to the Senate (in December) for final authorisation. Since the accounts close at the end of this quarter, if a budget has been received then, but not used,

another action plan for it will need to be created next year.

#### 5.7 DRSSD budget transfer

To support the transfer of funds, each level of government has to go through certain processes before the target Districts can be reached, as demonstrated in **Figure 4**. The process starts at the national level where:

1. The MRD sends an official letter to the Ministry of Economy and Finance (MEF) to process the budget to be allocated from the MRD's account to the target District
2. After receiving the letter, the MEF reviews it then transfers the request through to the National Treasury who registers the transaction
3. The National Treasury then continues the process by transferring the budget to each target province
4. Then Provincial Treasury receives and registers the budget before transferring it to the account of the target District (following the official letter from the National level)
5. The Provincial Treasury then relays this information to the target District for them to prepare a budget request
6. The district starts to prepare the budget request to send to the Provincial Department of Economy and Finance (PDEF) who review it to assess that what they are requesting is correct and follows proper practise
7. The PDEF then confirms this and sends acknowledgment to the Provincial Treasury
8. The Provincial Treasury is then allowed to transfer the budget to the District.



**Figure 4 - Financial process for sanitation budget transfer within Cambodian government, Sevea 2019**

## 5.8 Bottlenecks: Planning, allocation, usage and transfer of funds for DRSSD

### DRSSD Budget planning, allocation and usage

As mentioned before, part of the 20% of DMF and CSF used for capacity building (meetings, field visit and trainings) could be allocated for sanitation. In reality, this budget only lasts for about 3 – 6 months, instead of the whole year as projected. Furthermore, there is more difficulty in understanding and calculating the different elements of how to request the budget for sanitation (as opposed to something like infrastructure) as it requires an action plan, receipts, financial reports, etc. The SNAs are not fully aware of how to do this. Additionally, sanitation is not necessarily seen by them as a priority: of the 22 sectors the budget could be spent on, sanitation is, on average, 10<sup>th</sup> from the bottom<sup>3</sup>.

Fundraising support is used when a community wants to build something smaller for the commune like a well or a pond. To get this money the community will ask the CSO if there is an NGO or private enterprise in the area willing to support them or for the pagoda to fundraise for them. Normally, the budget for sanitation comes from this and is used for triggering and behaviour

change. However, the funds raised can often be small.

Up to 2018, one of the ways the budget was managed for districts and communes was through a collection of information from interviews with the districts' committees. They would relay their activity plans and needs to the official district governor for budget allocation. It was often the case, however, that the meetings would only consist of a few people as many committee members didn't attend. They would instead only attend the final agreement meeting, with the agreements reached for activity implementation not being made available publicly. The committee members (including a financial advisor) would complain that the budget for supporting the district operation and development of the community was small.

The district would also end up spending their own finances (i.e. to cover allowances) and have to wait for 3-6 months for reimbursement. Moreover, there is also the complex and unclear rules of financial constraints on what can and cannot be spent on, ending up in reimbursements not made at all as districts would have spent it in the wrong categories. One reason for this happening is that the PDEF had

<sup>3</sup> This information was gathered from Sevea's meeting with SNV and the World Bank held in July 2019

not provided the districts with a clear guideline or given them training on how to process the budget.

At each SNA, the usage of the ‘mission package’ budget is not clearly defined and there is no dedicated amount for sanitation. Of the budget they receive there is only USD\$25-50 for each sector that they can use for certain. For the rest, they are unaware of how to and how much to spend. Additionally, most of the districts don’t receive a budget for operational support, but only hardware and so, most of the time they have to fundraise for a support budget from development partners so they can continue with their activity plan.

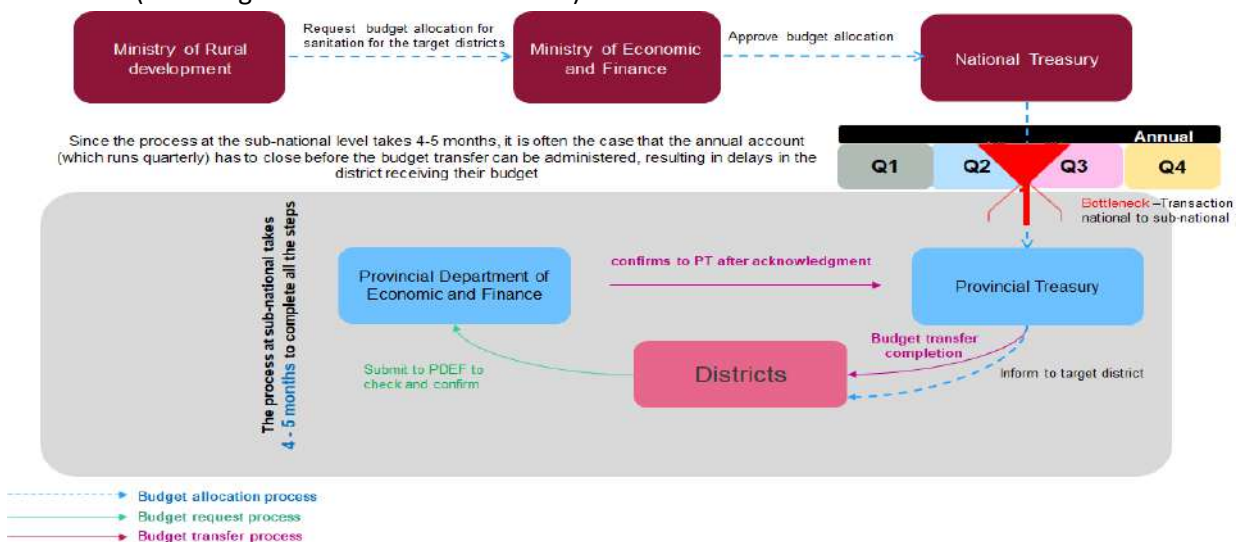
### DRSSD budget transfer

Throughout the budget allocation, transfer and usage process, there are different bottlenecks and blocking points (some more major than others), that significantly impede the project’s progress and therefore cause further delays in rural sanitation service provision. Following, the most substantial barriers that were highlighted during Sevea’s field visits, are discussed.

made from the MRD to the pilot districts. However, since this was a new activity, there was not a specific budget allocated for it and the MRD had to review the entireties of their budgets to see the part that could be allocated to the DRSSD. Not only was this a time-consuming process, it was also unclear to the MRD how much they should be telling the MEF to be offering to the district Level directly, resulting in a still very small allocation of funds.

There were also major delays with the transfer, mainly due to budget requests being sent late as well as the general lengthy, time-consuming process wherein the activity took an average of 4-5 months to process at the subnational level alone. This meant that by the time the request was recorded, the annual accounts of the National Treasury had to close, and the transfer could not be administered until the following year (see **Figure 5** for a scheme illustrating this process). In addition, many mistakes are made i.e. registering funds in the wrong categories, so time needed to correct and revise this slowed down the transfer even more.

During phases one and two of the pilot project, the transfer of sanitation function to sub-national level (including limited financial transfers) were

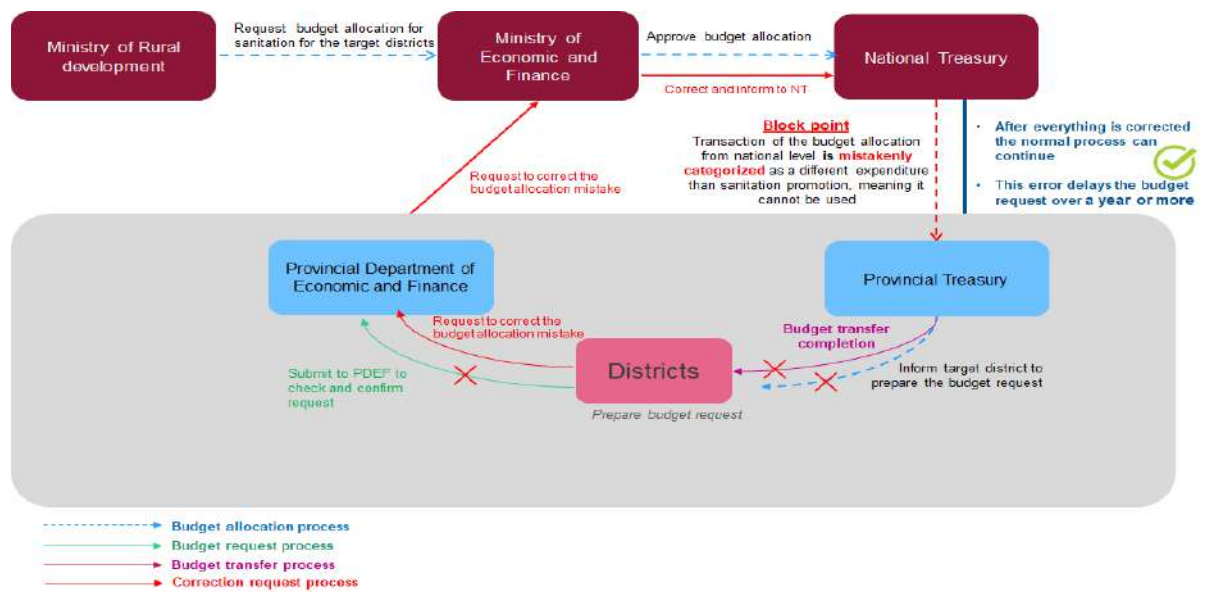


**Figure 5** – Sanitation budget transfer late process bottleneck within Cambodian government, Sevea 2019

### Case Study: Kampong Chhnang province

In the case of Kampong Chhnang province's budget transfer, it was realised by the Provincial Treasury that the budget allocation from the National level had been wrongly registered into a different expenditure category, meaning that the districts could not request to use the budget. To rectify this, the district had to register the issue with the PDEF. The PDEF then had to process the request for change back to the MEF for them to

correct it. The MEF then reviewed the request and confirmed the issue with the National Treasury. The National Treasury then had to amend the category and continue to process it on to the Provincial Treasury, where they could start again from where they left off. The whole process took over a year and meant that the districts in Kampong Chhnang did not have any budget to use to support their activities to achieve their annual targets. See this process illustrated in **Figure 6**.



**Figure 6** - Kampong Chhnang Province sanitation budget transfer, Sevea 2019

## 6. SCALING UP DRSSD FUNCTIONAL TRANSFER NATIONWIDE

As part of the financial analysis for the transferred function at the sub-national level, a prospective exercise was conducted to estimate the costs of scaling up the decentralisation of rural functional transfer nationwide in Cambodia and the cost implications to SNAs for future nation-wide rollout of the assigned function transfer.

In order to gain a better idea of the overall costs for scaling up the DRSSD functional transfer nationwide, cost assumptions from the NAP II model were taken for ODF verification to be used in the financial model within this report. Any costings for post-ODF status (i.e. the costs needed to monitor and uphold ODF status for the following years) have not been included as this was not provided in the initial pilot project.

For this modelling exercise, socio-economic data, social inclusion and pro-poor support mechanisms, geographic diversity (especially with respect to private sector sanitation access), challenging environments were considered.

### 6.1 Modelling methodology overview

The first step in developing the model was the creation of a broad database, providing information on all districts of Cambodia, with variables such as population, poverty, rurality, ID-poor and existing sanitation coverage. The data concerning sanitation coverage was collected from WaterSHED (giving the coverage in 2014 of 58 districts), iDE (57 districts in 2016 and 2018) and SNV (15 districts from 2015 – 2019). The data shared by SNV were from the DRSSD pilot discussed in this report. Finally, all data whose sources haven't been detailed above come from the most recent database of the MoI and census.

The coverage level of municipalities was removed from the dataset, thus reducing its size to 161 districts. This reduced the samples coming from other organisations (WaterSHED's being brought down to 50 districts, iDE's to 57 and DRSSD pilot at 15). The next objective, therefore, became estimating the coverage levels of the missing districts based on the available data.

To do so, a k-means clustering was put in place to see if potential classes of coverage levels could be established, depending on other factors. The idea was as follows: if strong categories of sanitation coverage levels could be built based on other variables, the average coverage level within a category could be used as an estimation of the coverage level of the missing districts falling within this category. The 39 districts were grouped into four different categories based on their rural area and poverty. This categorisation allowed all 161 districts to be grouped and to predict their coverage levels in 2014 based on that of the WaterSHED dataset.

Once the sanitation coverage for each of the 161 districts at different points in time had been estimated, a new model had to be built to predict how sanitation coverage had evolved in the last few years. It was thus decided to base the evolution of coverage from 2014 to 2020 on the economic development of each district. A scale (from 1 - very weak development to 5 - very fast development) was established and different evolution factors based on this data were attributed. Following this procedure, a relatively reliable prediction of the sanitation coverage in 2020 for all the districts in Cambodia was achieved. Finally, it was noticed that SNV included shared latrines while WaterSHED and iDE only took into account privately-owned ones in their coverage analysis. To solve this discrepancy, a coefficient increase was computed and added to the coverage levels which did not include shared latrines, giving an estimation of the 2020 sanitation coverage level for every district in Cambodia.

In this next phase, the main goal was being able to forecast the impact of TS on the coverage levels of districts in the next few years, based on data coming from DRSSD pilot. Different statistical tests were run, and it was concluded that a multiple regression analysis was the best method to model the evolution of sanitation coverage. Eventually, a model, which could reasonably predict the sanitation coverage at year T=1 based on the % of rural communes, the

poverty incidence and the sanitation coverage at year T=0, was developed. While the model had a satisfying R-squared of 0.95, it must be used with caution due to the limited sample size used to design it. Indeed, the high p-values and notably important weight of the sanitation coverage at year T=0 variable insinuated that there are high risks of overfitting the model or of the presence of explanatory variables.

The database being complete, it was used together with the costing model which had been developed in parallel. The observation of the budget plans and financial reports provided by SNV exhibited the emergence of trends in the pricing of each activity. From these trends, formulas were developed following simple logic; the cost for each administrative entity would be structured as follows: an annual-fixed and a variable cost based on the number of 'sub-entities' (e.g. the variable cost for a district is based on the number of communes within said district). By combining all models that had been developed, it became possible to obtain an estimation of a country's sanitation coverage in 2020, of its growth rate throughout the years and of the cost needed for it to attain 100% coverage. Throughout the development of the model an important assumption was made in order to better appreciate the results: every district reaching 90% sanitation coverage or above was to be considered as having in fact reached 100% coverage. The reason for this assumption was two-fold. Firstly, it was observed that the model had an 'optimistic tendency'; its margin error was constantly negative, thus indicating that the model underestimated the actual growth of sanitation coverage. And secondly, the impact of potential direct government subsidies was not taken into account while developing the model, it is however known that partial subsidies are essential to reach the poor, the model, therefore, once again underestimates the potential coverage growth.

It must be noted that, the coverage data coming from the MRD, states that the rural sanitation coverage is 71% in 2017 while the model developed estimates it to be of 72.2% in 2019 and

then 75.0% in 2020. A more detailed explanation of the methodology used to construct the model can be found in **Appendix A**.

## 6.2 Limitations of the model

As mentioned earlier, the samples used in designing the models are relatively small, thus leading to additional risks concerning the conclusions drawn from the analysis. The limited sizes of the datasets are not sufficient to guarantee full statistical significance and to eliminate possibilities of explanatory variables or of over-fitting the model. It is imperative that the findings arising from the developed models are used as mere estimates and not as irrefutable figures.

In addition to the limitations concerning statistical significance, other concerning assumptions must be taken into account. While developing the model, it was assumed that once a village had reached 100% coverage, the costs arising later on should not be included. In other words, the model only accounts for the costs necessary to bring a village to full sanitation coverage and does not take into account the costs necessary to maintain this status (i.e. extra trainings, support, meetings or door to door activities<sup>4</sup>).

As mentioned earlier, the model only takes into account sanitation promotional activities and does not include subsidies, O&M or CapEx (unless specified to be added on retrospectively as discussed later in the report).

A final limitation arises from the type of data used to develop the DRSSD model. Having used data points concerning sanitation coverage at a district level, it is difficult to apply the findings of the model to the village level. In terms of coverage, the model will not consider villages within a district as being potentially different, it will assign the same levels of coverage to each village of the district. In other words, a village cannot be considered as having reached the ODF status until all other villages within the same district have actually reached it. This aspect of the DRSSD model might lead to the

---

<sup>4</sup>



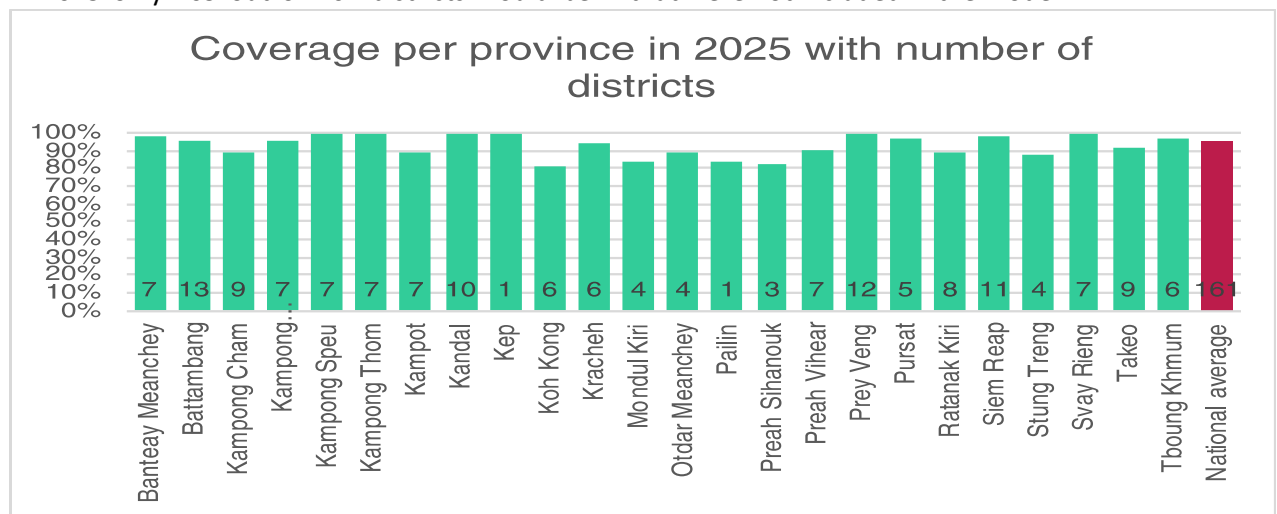
underestimating of the actual number of villages having reached full coverage.

### 6.3 Prospective Analysis – Results

#### Macro Analysis: Evolution of the sanitation coverage rate by 2025

According to the RWSSH National Sanitation Plan, Cambodia is expected to reach universal access to sanitation by 2025. Considering the evolution of the coverage rate during the DRSSD pilots, if the same rate of adoption of latrines continues, in 2025 only 109 out of 161 districts would be

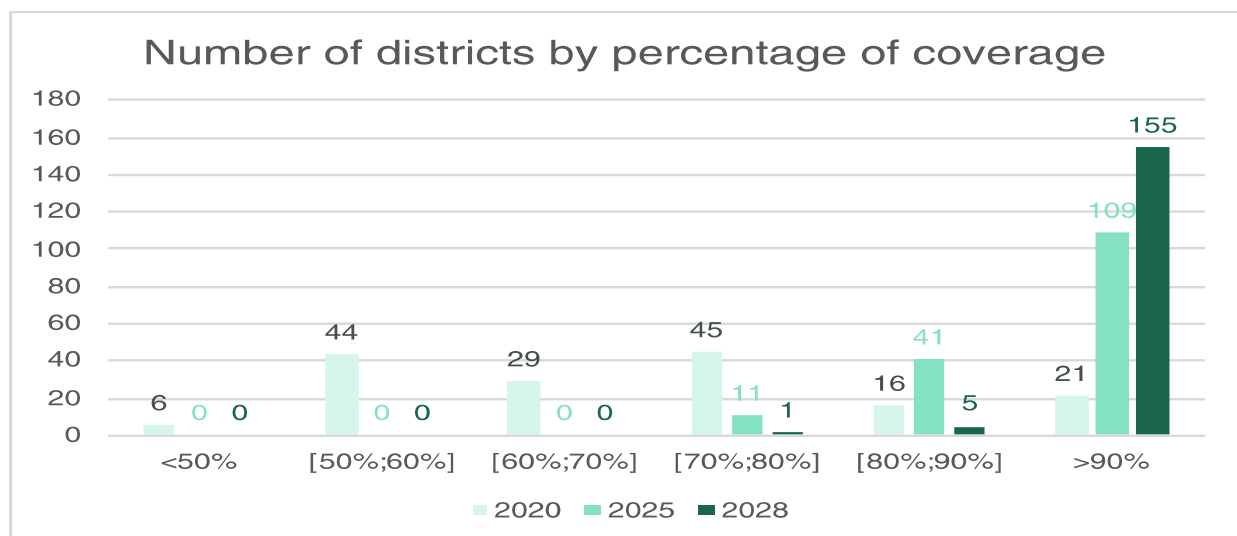
considered as fully covered with an average of 95.4% of sanitation coverage in rural areas. Following the same model, 100% universal access would only be achieved in 2035. However, by 2028, 99.4% of the districts would have reached over 90% access to sanitation. The model was thus run only to 2028 as it was assumed that the remaining districts who had not reached full coverage were those with more barriers in terms of economic status and poverty from the beginning, so they would benefit from subsidies that were not included in the model.



**Figure 7** - % of coverage per province in 2025 based on SNV, iDE and WaterSHED data, Sevea 2019

**Figure 7** demonstrates how each province will have reached at least 80% sanitation coverage or

above, with five having reached 100% coverage and a national average of 94%.



**Figure 8** – Number of districts per category of coverage in 2020, 2025 and 2030, based on SNV, iDE and WaterSHED data, Sevea 2019

When comparing the number of districts in each category of access to sanitation **Figure 8**, it becomes clear that most of the districts would have already improved in 2025, some reaching 100% coverage, some falling behind below 70-80% but still progressing as none of them would stay in the three lowest categories.

Finally, the number of years necessary for a district to be considered as reaching 100% coverage has been estimated from the initial coverage in 2020. Based on the data from the model, a district already over 80% coverage will need less than a year to reach 100% with TS, whereas a district initially below 50% access to sanitation will approximately need 7 to 8 years to reach universal access.

#### 6.4 Cost Analysis of scaling up and cost effectiveness of DRSSD

Based on the Sevea’s costing model (utilising DRSSD Phase I and Phase II costs), the overall costs for scaling up DRSSD have been analysed for the pre-ODF DRSSD promotional activities required for each district to reach 100% sanitation coverage, which is to be implemented

at the subnational level. The coverage and costs with TS, pre-ODF DRSSD promotional activities and ODF verification are at 95.4% coverage, incurring USD\$ 11.74M, and USD\$ 17M at near 100% coverage. These costs do not include those for CapEx or O&M (such as those included in the NAP II costing analysis).

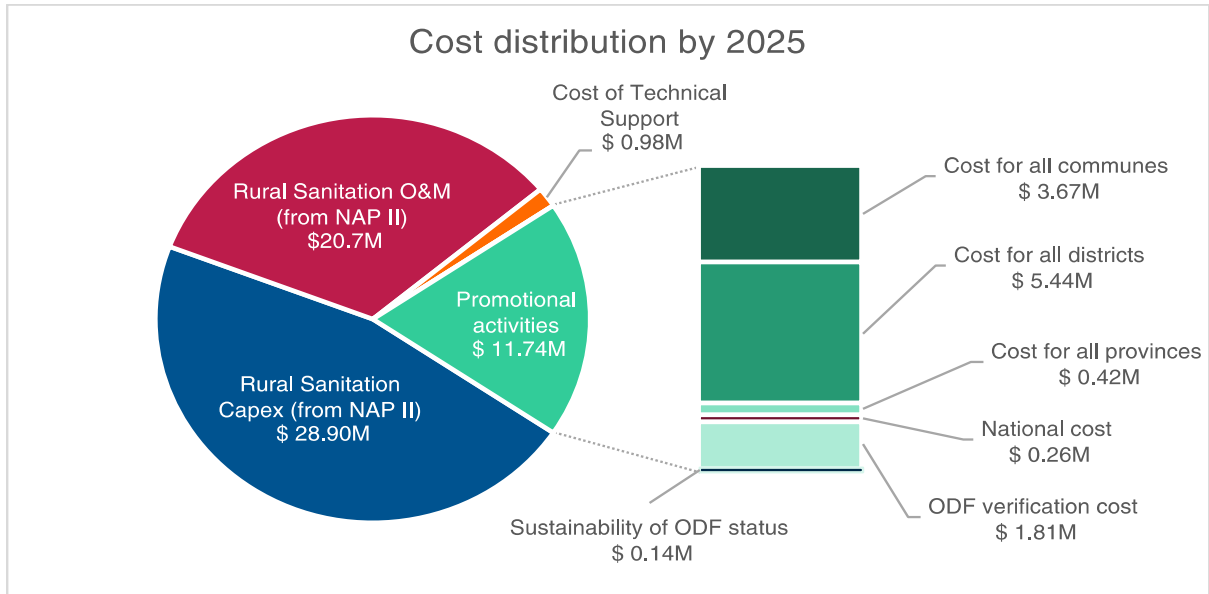
The analysis reveals that in 2028, when DRSSD coverage would reach 100% nationwide, the actual sanitation coverage level will be 99.4% and six districts will not yet have reached full coverage (**Table 6**). This discrepancy arises from the linearity of the developed model i.e. it does not consider that non-ODF districts will receive higher financial support, etc. The model concluded that 2028 would be the year all districts would reach full sanitation coverage. It is also worth noting that the cost of TS does not increase, despite the length of the programming extending from five to eight years. As previously noted, the model indicates only two years of TS would be necessary to achieve DRSSD at scale. By focusing on capacity building and peer learning activities, the benefits of TS outlive the two-year duration and bring long-term improvements.

**Table 6** – Costs of reaching access to sanitation in rural areas in 2025 and 2028 based on DRSSD pilot

	With decentralisation and TS until 2025	With decentralisation and TS until 2028
<b>Costs based on DRSSD pilot promotion activities and 2 years of TS</b>		
Average sanitation coverage	95.4%	99,4%
# of districts having reached 100% coverage	109	155
Cost of DRSSD promotion activities	\$11.74M	\$17.0M
Cost of TS (2 years)	\$978K	\$978K

project data, Sevea 2019

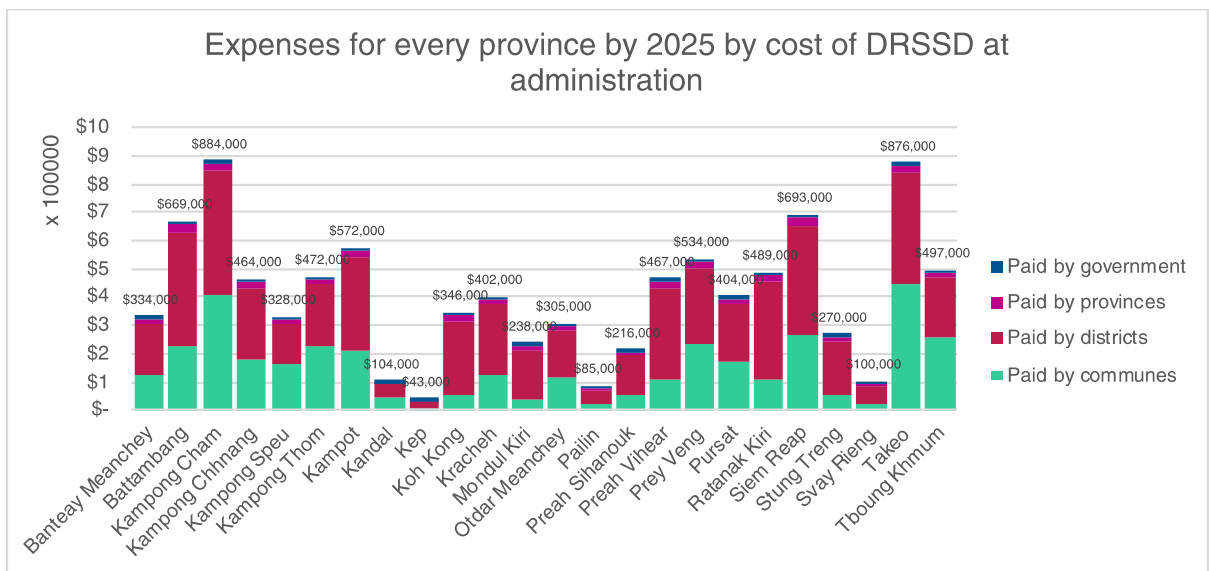




**Figure 9** – Cost of decentralised rural sanitation until 2025 (Costs based on DRSSD pilots and NAP II data, without post-ODF activities and subsidies), Sevea 2019

**Figure 9** demonstrates the expenditure costs for rural sanitation with a breakdown of DRSSD costs for pre-ODF activities. The largest cost comes from the capital expenditure – nearly half of the

total amount. In comparison, the cost for TS is small. The largest cost will be for the districts, with minimal costs for the provincial and national level.



**Figure 10** - Cost for every province until 2025 with DRSSD promotional activities, Sevea 2019

Looking at the cost of pre-ODF DRSSD promotional activities per province in 2025, the model estimates the cost of all the provinces will be between USD\$ 43K (Kep) and USD\$ 884K

(Kampong Cham), with four provinces having a total cost higher than USD\$ 600K and seven being below USD\$ 300K

## 7. CONCLUSIONS & RECOMMENDATIONS

### 7.1 Conclusion

The overall costs for scaling up DRSSD have been analysed for the pre-ODF DRSSD promotional activities required for each district to reach 100% sanitation coverage, which is to be implemented at the Subnational level. The coverage and costs with TS, pre-ODF DRSSD promotional activities and ODF verification are at 95.4% coverage, incurring USD\$ 11.74M, and USD\$ 17M at near 100% coverage. These costs do not include those for CapEx or O&M (such as those included in the NAP II costing analysis).

Through the analysis of the pilot projects, wherein sanitation functions were transferred from the National to Subnational level, it is evident that this an effective means of providing sanitation services at the local level. The main reason being communes and District Administrations are closer to the community and are, therefore, more aware of their requirements, which is a more responsive model. Furthermore, with the budget for sanitation also being transferred to the Subnational level, funds are more readily available for the districts to make progress in sanitation service delivery, allowing them to manage their services in a more performance-driven manner.

Although the decentralisation of rural sanitation function transfer is beneficial for the reasons stated above, especially over the longer-term, it is worth noting the transfer of functions is a relatively new process. For the Subnational level to take ownership, TS support is required from the national level. It is unknown exactly how long this support will be required before the SNAs can function effectively on their own. MRD's support of the SNAs will be required (e.g. provision of training and other assistance) to ensure SNAs reach full capability.

The process of functional transfer (with continued support) should aim to last two years (one year for establishment, the next for TS, which can be adjusted accordingly). Following this, the extra support mechanism required from

the national authorities will be for Monitoring and Evaluation, refresher trainings - which can be administered on an assessed needs basis - and ideally ODF verification and re-verification. Although it has not been included in this costing model, costs for post-ODF status activities are also necessary. It is recommended that DWG meetings should continue to sustain ODF, account for safely managed services and move from shared to individual household latrines.

### 7.2 Recommendations

The findings of the financial analysis conclude that the functional transfer of DRSSD can bring success in the provision of sanitation services. However, there are a few suggestions to further the progress and reach the sector targets. One way to further this analysis would be to only conduct a modelling exercise of post-ODF DRSSD activities. The results can then be combined and analysed.

#### Monitoring system

In order to reach the sector target of 100% sanitation coverage, it is imperative that a Monitoring and Evaluation (M&E) system is put in place at the district and provincial level to provide an overview of the status of sanitation coverage at the local level and track community mobilisation, capacity building, promotion and operational expenditures. MRD will then be able to assess which areas are working well and which areas are in need of more attention. The monitoring system developed under the DRSSD pilots can be utilised at the national level.

#### Technical Support for the first period of function transfer

The decentralisation process has afforded important information on the best practises of implementation.

TS enables districts to understand who is responsible for each task at each level, at the same time giving them ownership and allowing them to lead their functions efficiently. TS acts as an investment for the continuation of the

decentralisation process and when each level has become proficient within its role, the established guidelines can be handed over to the national and provincial level to implement M&E and maintain operations.

It is vital that TS is deployed at every level to clarify the process, facilitate the HR mechanism, ensure that the function transfer has been set up and ensure ownership at each level. It will also support all stakeholders in developing their work plan and guidelines on sanitation promotion as well as demonstrate how to implement the activity plan and M&E. There is a need for empowering all levels – PAs should be qualified to continue trainings under a ToT model.

### Budget allocation

To initiate DRSSD, two main components are required to ensure that the service is effective. The first is capacity building. The second is requisite budget for sanitation activities at all levels.

### District

It is estimated to cost from USD\$9.6K to 13.6K at the district level to promote DRSSD for the first year. The current budget allocation is insufficient. The proposed District Reform (2020) is expected to review and allocate budgets to the districts.

### Province

Although responsibility is being transferred to the district level, the provincial level still has an important role to play linking all government stakeholders and public and private development partners to support sanitation promotion. The provincial level is a key line of communication between the district and national level to ensure the alignment of goals. Provincial level officers will need to review sanitation access data to advocate for funding for pro-poor support and ODF verification.

### National - MRD

With nation-wide DRSSD implementation, the national level will retain important responsibilities, including the training and capacity building of the subnational levels and unifying all districts towards a common goal. To achieve this, the MRD will require a budget

allocation. Ultimately, the MRD should manage and oversee the ODF verification budget.

## BIBLIOGRAPHY

- [1] UNDP, "Goal 6 Targets - Sustainable Development Goals," United Nations Development Programme, 2016. [Online]. Available: <https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-6-clean-water-and-sanitation/targets.html>. [Accessed 15 July 2019].
  - [2] CSES, "Cambodia Socio-Economic Survey," National Institute of Statistics, Ministry of Planning, Phnom Penh, 2018.
  - [3] WHO, "Sanitation," WHO, 14 June 2019. [Online]. Available: <https://www.who.int/news-room/fact-sheets/detail/sanitation>. [Accessed 15 July 2019].
  - [4] SNV, "Decentralisation of sanitation and hygiene promotion services: Lessons from Cambodia," Draft learning note, Phnom Penh, 2019.
  - [5] W. Bank, "Supply Chain Assessment for Sanitary Latrines in Rural and Peri-Urban Areas of Cambodia," International Development Enterprises, 2007.
  - [6] WHO, "Water, Sanitation and Hygiene (WASH)," WPRO, 2015. [Online]. Available: [http://www.wpro.who.int/cambodia/topics/water\\_sanitation/en/](http://www.wpro.who.int/cambodia/topics/water_sanitation/en/). [Accessed 15 July 2019].
  - [7] CLTS, "Handbook on Community-Led Total Sanitation," Institute of Development Studies, Sussex, 2008.
  - [8] D. Pedi, "The "hands-off" sanitation marketing model: Emerging lessons from rural Cambodia," *THE FUTURE OF WATER, SANITATION AND HYGIENE: INNOVATION, ADAPTION AND ENGAGEMENT IN A CHANGING WORLD*, pp. 1 - 4, 2011.
  - [9] G. Divay, "Deconcentration," Encyclopedic Dictionary of Public Administration, 2012. [Online]. Available: [www.dictionnaire.enap.ca](http://www.dictionnaire.enap.ca). [Accessed 15 July 2019].
  - [10] W. Käln, "Decentralization - Why and How?" University of Berne, [Online]. Available: [http://www.ciesin.org/decentralization/English/General/SDC\\_why\\_how.pdf](http://www.ciesin.org/decentralization/English/General/SDC_why_how.pdf). [Accessed 15 July 2019].
  - [11] P. Reymond, "Towards Sustainable Sanitation in an Urbanising World," *INTECH*, pp. 115-134, 2016.
  - [12] W. Bank, "Voice, Choice and Decision: A Study of Local Governance Processes in Cambodia," *CAMBODIA: GOVERNANCE PARTNERSHIP FACILITY*, Phnom Penh, 2011.
  - [13] ADB, "Country Partnership Strategy, Cambodia 2014-2018," Asian Development Bank, 2014.
  - [14] Ministry of Interior, Royal Government of Cambodia, "Operational Guidelines for the Decentralisation of Rural Sanitation Service Delivery," Phnom Penh, 2019.
  - [15] World Bank, "Cambodia RWSS sector improvement support Synthesis Report," World Bank, Cambodia, 2016.
  - [16] ADB, "Fiscal Decentralization Reform in Cambodia: Progress over the Past Decade and Opportunities," Asian Development Bank, Cambodia, 2018.
  - [17] The NGO Forum on Cambodia, "Cambodian National Budget," Cambodia National Budget, 2015. [Online]. Available: <http://www.cambodianbudget.org/index.php?page=00046>. [Accessed 23 July 2019].
  - [18] NAP II, "Costing of National Action Plan on Rural Water Supply, Sanitation and Hygiene 2019-2023," Government of Cambodia, Phnom Penh, 2019.
  - [19] W. Bank, "The World Bank in Cambodia," The World Bank Group, 11 April 2019. [Online]. Available: <https://www.worldbank.org/en/country/cambodia/overview>. [Accessed 15 July 2019].
-

- [20] WaterSHED, "A survey on basic water and sanitation facilities in eight target provinces of WaterSHED in Cambodia," 30 July 2015. [Online]. Available: <http://www.watershedasia.org/sanitation-data-coverage/>. [Accessed 01 July 2019].
- [21] Royal Government of Cambodia, *Draft Law on Financial Regime and Property Management for Sub-National Administrations*, Phnom Penh: Royal Government of Cambodia, 2012.
- [22] K. Long, "Commune budget to double in 2020," *The Phnom Penh Post*, 14 February 2019.
- [23] Cambodian Rehabilitation and Development Board Council for the Development of Cambodia, "Development Cooperation and Partnerships Report," Royal Government of Cambodia, Phnom Penh, 2018.
- [24] The World Bank, "Water Supply and Sanitation in Cambodia, Turning Finance into Services for the Future," The World Bank Group, Phnom Penh, 2015.

## APPENDIX A

### METHODS USED IN DESIGNING THE SANITATION COVERAGE MODEL

The purpose of this section is to detail the methods and statistical tools used in developing the sanitation coverage forecasting model. It also highlights the model's limitations and provides recommendations on how to add to its usability, should new data be added.

Two major steps composed our analysis: first, updating the coverage data of all districts to date and secondly, assessing the impact of TS on the growth rates of sanitation coverage.

#### I. Updating the sanitation coverage levels to date

Our analysis started with the creation of a broad database, providing information on all districts of Cambodia, with variables such as population, poverty, rural area, ID-poor and existing sanitation coverage (where possible). The data concerning sanitation coverage was collected from different organisations; WaterSHED shared the levels of coverage in 2014 of 58 districts, iDE that of 57 districts in 2016 and 2018 and SNV that of 15 districts from 2015 to 2019. It must be said that the data shared by SNV were from the DRSSD pilot. Finally, all other data referred to in the report is from Sevea's own database.

Once all necessary data had been gathered, it was decided that municipalities should be removed from the analysis since their coverage did not fall within the scope of the MRD, bringing our sample down to a total of 161 data entries over the three data sources. WaterSHED's data was reduced to 50 districts, iDE's to 57, whereas the DRSSD pilot was maintained at 15. In other words, we had information on the coverage levels of 122 districts for different years. Our next task was to estimate the coverage levels of the 39 districts missing from each source's data entries.

We ran different statistical tests to find a way to estimate the coverage levels of the 39 missing districts (e.g. correlation matrixes, linear regressions, etc.) One method in particular provided us with good results: K-means clustering. Using data from 45 districts provided by WaterSHED (in the first part of the analysis, data from iDE was not available and WaterSHED's

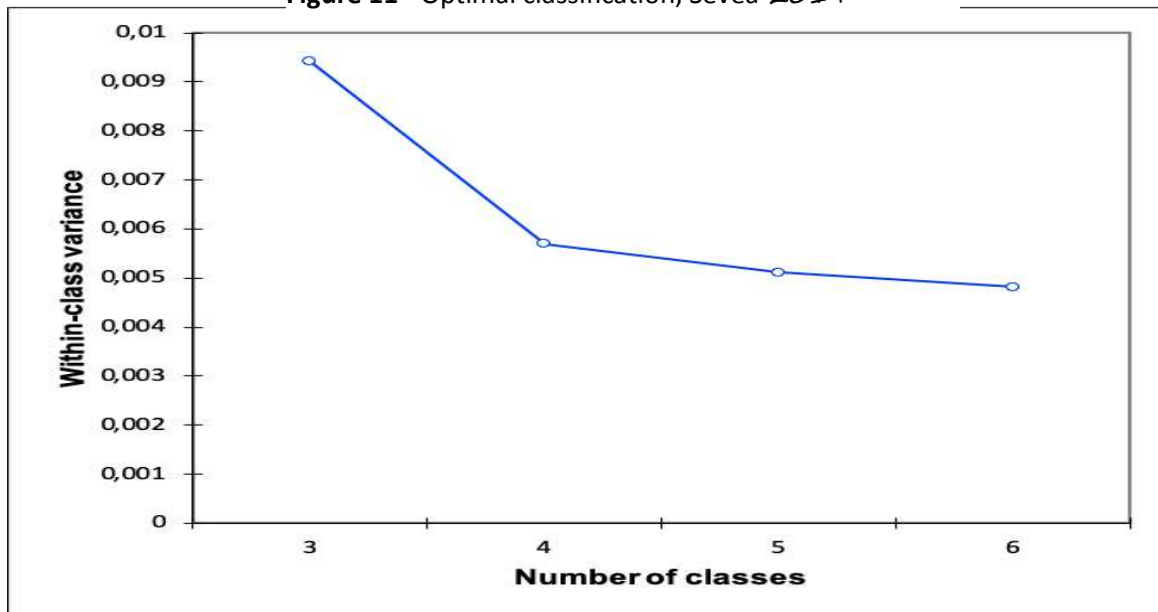
sample consisted of 45 districts), k-means clustering was used to see if potential classes of coverage levels could be established, depending on other factors. The idea was as follows: if strong categories of sanitation coverage levels could be built based on other variables, the average coverage level within a category could be used as an estimation of the coverage level of the missing districts falling within this category.

After having explored different possibilities, the best results were found using two variables for the clustering: % of rural communes within the district and poverty incidence. The programme was set to perform 50 iterations and to look between 3 to 6 clusters. A four-cluster categorisation was the choice. Satisfying results with a within-class variance of 7.75% and a between-class variance of 92.25% were obtained. Furthermore, the centroids of the four clusters had extremely different rurality percentages (ranging from 14% to 85%) and relatively different poverty incidence. The average sanitation coverage within each cluster was then computed. Once again, results were obtained with the averages ranging from 41 to 52%. Based on these findings the categorisation was applied to the 39 remaining districts and each of these districts was attributed the average sanitation coverage of

the cluster it belonged to as its own coverage level. Approximate coverage levels based on a pool of 45

districts and information concerning rurality and poverty could be estimated.

**Figure 11 - Optimal classification, Sevea 2019**



With k-means clustering, we had an estimation of the sanitation coverage at a certain point in time for all districts within our dataset. With this progress came a new challenge: our initial goal was to estimate the sanitation coverage nationwide in 2020 (the year chosen as the launch year of the financial analysis), but the coverage levels that we had gathered came from older and scattered data. Thus, the following question was asked: starting from different points in time (2014, 2018, etc.) how could we estimate the coverage levels in 2020?

From reviewing past data, it was concluded that the economic development of a district had an important impact on the growth rate of the district's coverage. A scale was, therefore, developed, ranking districts on their economic development from recent years. This scale is an ordinal one, with possibilities ranging from 1 (very weak economic development) to 5 (very strong economic development). Growth rates were associated to these scales - districts undergoing strong development would see their coverage level grow at a faster pace than those experiencing rather weak economic development.

Before moving on to the second phase of our analysis, the matter of harmonization had to be undertaken. It was noticed that whilst the MRD and

SNV computed their coverage levels by taking into account privately-owned as well as shared toilets (considering 85% private and 15% shared as 100% coverage), WaterSHED and iDE only accounted for privately-owned latrines, thus leading to major discrepancies in the levels of coverage. This matter being often encountered when dealing with secondary data, a relatively usual solution was therefore applied. SNV has shared their measurements with and without shared latrines, and we were able to estimate the average increase in coverage caused by adding shared latrines to the computation of said coverage. Therefore, we increased the 2018 coverage levels of WaterSHED and iDE by 15%, following our computation.

After this final step, we managed to compute harmonized estimations of the coverage levels for all districts in Cambodia in 2020.

## II. Assessing the impact of Technical Support on the growth rate of sanitation coverage



In this phase of our research, the main goal was being able to forecast the impact of TS on the coverage levels of districts in the next few years, based on data coming from the DRSSD pilot project put in place with SNV. The first step was to look for apparent relationships between variables through correlation matrices. It is important to highlight that for this part of the analysis, the only data used were those provided by SNV. This drastically reduced our sample size to only 15 observations

but was also necessary to try and measure the TS' impact. Pearson's correlations brought conclusions relatively similar to those of the first step of our analysis: the sanitation coverage at time t=1 of a district is strongly linked to the % of rural communes within said district and to the poverty incidence. However, it could also be seen that the strongest correlation was between the sanitation coverage level at time t=1 and that at time t=0.

Province	Kampong Speu							Thbong Khmum					Kampong Chhnang		
District	Samroang Tong*	Phnum Srouch*	Udong	Oral	Thpong	Baseth	Kong Pley	Ponhea Kreak	Tbong Khmum	Memot	Dambae	O Raing Ov	Sammeaki Meanchey*	Rotea B'lar*	Kampong Tralach*
# Population (2010)	171,650	103,885	134,118	37,806	59,997	147,611	136,686	141,320	187,000	151,648	86,397	97,680	82,022	108,359	97,495
# Female	87,478	53,598	67,890	19,477	31,038	74,670	70,740	73,300	96,663	78,198	45,273	53,279	42,990	56,885	50,365
# Male	84,172	50,287	66,228	18,329	28,959	72,941	65,946	68,020	90,337	73,450	41,124	44,401	39,032	51,474	47,130
# Households (2010)	35,439	22,469	28,542	7,878	13,011	30,523	29,178	31,293	38,949	32,822	17,575	19,076	19,476	24,640	21,496
# Poor HLH (Poor1 & Poor2)	3,585	1,861	2,752	1,192	868	4,211	3,696	3,951	5,626	4,094	3,274	2,074	3,996	4,961	3,552
# People Living with Disability	1,519	535	850	234	336	1,528	1,158	630	850	572	241	143	824	650	525
# Communes	15	12	15	5	7	15	13	8	14	14	7	7	9	13	10
# Villages	294	153	251	72	84	218	250	150	211	179	83	142	90	135	163
San coverage 2016	46%	33%	44%	28%	34%	63%	51%	46%	64%	41%	44%	62%	47%	51%	44%
San coverage 2017	68%	41%	58%	29%	41%	66%	66%	53%	67%	46%	43%	67%	52%	55%	50%
San coverage July 2018	86%	61%	74%	38%	58%	87%	82%	65%	77%	55%	57%	74%	58%	67%	68%

Figure 12 - DRSSD pilot data (shared and private latrines)

After performing a number of tests and analysis, it was concluded that the model which would fit the data best would be a multiple linear regression analysis, with 3 independent variables (% of rural communes, poverty incidence and sanitation coverage at time t=0) and sanitation coverage at time t=1 as the independent variable. Three distinct models were developed, the first one using the coverage of 2016 to predict that of 2017, the second one using 2017 to predict 2018 and the last one using 2018 to predict 2019. Very satisfying R-squared were reached for all three models (all above 0.85). Adding other variables, such as the Likert economic scales, did not bring about any significant improvements, therefore, it was decided that the analysis would continue with only these three parameters. Despite obtaining high R-squared we considered the small size of the samples and the risks that came with it (overfitting of the data, explanatory variables etc.) In order to find the most appropriate model, data from all available years was plugged into the different models, to see how well they predicted the growth of coverage with new inputs. It appeared that the model developed for the year 2018-2019 gave the

best results (absolute error of 4.3% and relative error of 3.4%), it was, therefore, decided that this would be the reference model.

### III. Final steps and cost modelling

With these two steps of our analysis completed, all the necessary data was available to compute the total costs of extending the TS programme to the national-scale. The recently computed 2020 sanitation coverage levels were added to the database, as well as the equation derived from the 2018 multiple regression analysis. This equation was used to compute the yearly coverage growth until the district attained full coverage. Due to the structure of our model and that the Government subsidies were not included in the growth rate computations, we considered that a district had reached full coverage when the model estimated its coverage to be above 90%.

Our database being complete, it was used together with the costing model developed in parallel. This model broke down the cost of developing sanitation coverage by administrative levels (village, commune, district, province and national)



as well as by year. By combining all developed models, it became possible to obtain an estimation of a country's sanitation coverage in 2020, its growth rate through the years and the cost needed for it to attain 100% coverage.

Reviewing the NAP II costing excel file also provided additional information. We learnt that the cost of verification if a village had reached ODF-status was USD \$250. Furthermore, it indicated that the cost for ensuring the sustainability of this ODF status was USD \$137 892. This new data was used to look at the costs of our model and the NAP. In addition to that, it was seen that a 3.29% annual inflation rate was applied. The same rate was, therefore, applied to our costs.

As mentioned earlier, the samples used in designing the models are relatively small, thus leading to drawbacks concerning the conclusions drawn from the analysis.

The limited size of the datasets are not sufficient to guarantee full statistical significance and to eliminate possibilities of explanatory variables or of over-fitting of the model. It is imperative that the findings from the developed models are used as mere estimates and not as irrefutable figures.

In addition to the limitations concerning statistical significance, others concerning assumptions must be taken into account. While developing the model, it was assumed that once a village had reached 100% coverage, the costs arising thereafter should not be included. In other words, the model only accounts for the costs necessary to bring a village to full sanitation coverage and does not take into account the costs necessary to maintain this status. When reviewing the NAP II costing data it was seen that the total cost per villages include activities put in place once a village has reached ODF status. This major difference in the elaboration of the model and the NAP must be kept in mind to understand that the two are not comparable. Finally, this model can be expanded by plugging new observations when possible in order to improve the forecasting.

---

APPENDIX B

FIXED AND VARIABLE COST CLASSIFICATION

**Table 7** - List of DRSSD pre-ODF fixed and variable costs taken from DRSSD pilot

Activity	Regularity	Frequency	Type of costs	Res
Phase I Year One (based on DRSSD pilot activity report of 2015-2016)				
Establishment of District Sanitation committees	Isolated event	Single	Fixed costs	District
Development of the district sanitation profiles	Isolated event	Single	Fixed costs	District
Data collection, processing and sanitation logbook	Isolated event	Single	Fixed costs	District
Appointed District Sanitation Support Officers	Isolated event	Single	Fixed costs	District
Support Bi-monthly meeting, coaching and review session	Isolated event	Monthly	Fixed costs	District
Development of quarterly report	Isolated event	Quarterly	Fixed costs	District
Capacity Assessment	Routine	Quarterly	Fixed costs	Province
JTWG Meetings	Routine	Quarterly	Fixed costs	National
Project orientation at district level	Isolated event	Yearly	Fixed costs	District
Provincial Stakeholder meeting	Isolated event	Yearly	Fixed costs	Province
District sanitation planning and Implementation	Isolated event	Yearly	Fixed costs	District
Road map and costing development	Isolated event	Yearly	Fixed costs	Province
BCC Tool Training	Routine	Yearly	Fixed costs	District
Meetings/ guidance of sanitation suppliers	Routine	Yearly	Fixed costs	District
Learning Event (Provincial level)	Routine	Yearly	Fixed costs	Province
BCC tool Refreshment Training	Routine	Yearly	Fixed costs	District
M&E and Reporting Training	Routine	Yearly	Fixed costs	Province
ToT on facilitation skills	Routine	Yearly	Fixed costs	Province
Roll-out training on facilitation skills	Routine	Yearly	Fixed costs	District
Exchange visit across provinces	Routine	Yearly	Fixed costs	Province
District learning and exchange visit	Routine	Yearly	Fixed costs	District

Final National Learning Event	Routine	Yearly	Fixed costs	National
Phase I Year Two (based on DRSSD pilot Work Plan for 2016-2017)				
Quarterly meeting	Routine	Quarterly	Fixed costs	District
Quarterly reporting	Routine	Quarterly	Fixed costs	District
Sanitation data updating (logbook)	Routine	Quarterly	Fixed costs	District
Workshop with JTWG, PDRD and Salakhet	Isolated event	Yearly	Fixed costs	National
Pilot evaluation/ field trips and Nat'l workshop	Isolated event	Yearly	Fixed costs	National
Coaching/ regular operations/ San officer	Routine	Yearly	Fixed costs	District
BCC Refresher	Routine	Yearly	Fixed costs	District
Sanitation Demand Creation: ToT	Routine	Yearly	Fixed costs	National
Sanitation Demand Creation: Training and materials	Routine	Yearly	Fixed costs	District
Sanitation Demand Creation: Refresher	Routine	Yearly	Fixed costs	National
Review Sanitation Officer performance	Routine	Yearly	Fixed costs	District
Learning and exchange visit cross district	Routine	Yearly	Fixed costs	Province
Preparation of 2017- 2018 Sanitation plan	Routine	Yearly	Fixed costs	Province
Financial Management and reporting	Routine	Yearly	Fixed costs	Province
Accounting and procurement training	Routine	Yearly	Fixed costs	Province
Meeting with Sanitation suppliers	Routine	Yearly	Fixed costs	District
M&E Reporting Refresher Training	Routine	Yearly	Fixed costs	Province
Update of the Operations guideline/ and other legal docs (only workshop budget)	Routine	Yearly	Fixed costs	National
Stakeholder meeting at commune	Routine	Yearly	Fixed costs	District
Demand creation Triggering at villages	Routine	Yearly	Fixed costs	Commune
Follow up activities at villages	Routine	Yearly	Fixed costs	Commune
Phase Two (based on DRSSD pilot activity and costing of 2018-2019)				

Workshop on developing performance benchmarking criteria on implementation, aiming to promote incentives for good practices at district and commune levels by central government. Including performance-based assessment tools and local initiative program promotion (e.g. establishment of SNA incentive system).	Isolated event	Single	Mixed costs	National
Support the new districts to establish the district sanitation committee with clear structure in each district	Isolated event	Single	Mixed costs	District
Support the SNA government in establishing baseline for 5 new districts	Isolated event	Single	Fixed costs	District
Develop rural sanitation performance benchmarking framework for all 5 districts, including incentive systems	Isolated event	Single	Fixed costs	TA
Develop draft strategy and tools, including operational manuals, expenditure guidelines, local resource mobilisation plan for strengthening capacity of SNA governments	Isolated event	Single	Fixed costs	TA
Review and strengthen national capacity development manual/packages and guidelines and supporting regulatory tools	Isolated event	Single	Fixed costs	TA
National learning event including Conducting the cost-effectiveness analysis of the TS and identify full costing of government spending to implement the decentralized rural sanitation service delivery	Isolated event	Single	Mixed costs	National
Office Rent, utilities, insurance	Isolated event	Single	Fixed costs	TA
Daily transport for Provincial coordinators	Isolated event	Single	Fixed costs	TA
Operational cost (Equipment and its maintenances)	Isolated event	Single	Fixed costs	TA
Monthly Allowance for District Sanitation Officers (USD\$55 x 15 district x 13 months)	Isolated event	Monthly	Fixed costs	District
Quarterly meeting to track the performance, impact and sustainability of interventions through M&E framework	Routine	Quarterly	Mixed costs	District
Semester provincial learning events	Routine	Bi-annually	Mixed costs	Province
Strategic orientation to all districts and relevant provinces, inception workshops, technical guideline and manuals to NSA and other stakeholders (Provincial level)	Routine	Yearly	Fixed costs	Province
Development of district sanitation and hygiene profiles	Isolated event	Yearly	Mixed costs	District

Workshop on work plan and budget, including CIP that support district-wide sanitation planning (district level)	Routine	Yearly	Mixed costs	District
Provide capacity building on preparing annual district sanitation plan and in implementing the programmatic approach to rural sanitation (BCC and CLTS)	Routine	Yearly	Mixed costs	Province
Provide capacity building on preparing annual district sanitation plan and in implementing the programmatic approach to rural sanitation (BCC and CLTS)	Routine	Yearly	Mixed costs	District
Support capacity of districts in allocating the district fund for rural sanitation, mobilizing external resources, the transferred fund from MRD and the other sources such as C/S fund allocation mechanisms (financial management and accounting procedure)	Routine	Yearly	Mixed costs	Province
Support SNA and relevant agencies in establishing appropriate mechanism for supporting sanitation market development and coordination with Microfinance Institutions (MFI)	Routine	Yearly	Mixed costs	District
Organize knowledge exchange and peer learning visits between newly selected districts and existing districts	Routine	Yearly	Fixed costs	District
Provide capacity building, training and coaching on M&E	Routine	Yearly	Mixed costs	Province
DSA and Accommodation for PDRD and District WASH officers (rates as per government procedures) and commune committee members participating in workshops and trainings	Routine	Yearly	Variable costs	<b>Dependent on the event location</b>
Transport costs for PDRD, District and commune representatives	Routine	Yearly	Variable costs	<b>Dependent on the event location</b>
Travel costs Provincial Coordinators such travel to other provinces/PP (SNV Policy) and monitoring activities in district (district at 6 USD per day)	Routine	Yearly	Variable costs	<b>Dependent on the event location</b>
International travel (SNV):	Isolated event	Year require TA	Fixed costs	TA
- Airfare	Isolated event		Fixed costs	TA
- Hotel in Phnom Penh	Isolated event		Fixed costs	TA
Local Travel (SNV)	Isolated event		Fixed costs	TA

- Ground transportation, vehicle hire	Isolated event		Fixed costs	TA
- Hotels in provinces/Phnom Penh	Isolated event		Fixed costs	TA
- Meals and Incidentals (DSA)	Isolated event		Fixed costs	TA
Office space & operations at 3 PDRDs	Isolated event		Fixed costs	TA
Communication Expenses	Isolated event		Fixed costs	TA