



Sanitation Finance Strategy

Kingdom of Cambodia

Ministry of Rural Development and
Ministry of Public Works and Transport

June 2024

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Abbreviations and acronyms

ADB	Asian Development Bank
AIMS	Accelerating Inclusive Markets for Smallholders
CARD	Council for Agricultural and Rural Development
CDC	Council for the Development of Cambodia
CSDG	Cambodia Sustainable Sanitation Goals
CWAS	Center for Water and Sanitation
DPWT	Department of Public Works and Transport
DPWT	Provincial Department of Public Works and Transport
DRHC	Department of Rural Health Care
EIA	Environmental Impact Assessment
FSM	Faecal Sludge Management
FSTP	Faecal Sludge Treatment Plant
FTB	Foreign Trade Bank
GCF	Green Climate Fund
GDP	Gross Domestic Product
GDSWM	General Department of Sewerage and Wastewater Management
GGGI	Global Green Growth Institute
GRET	Group for Research and Technology Exchanges
iDE	International Development Enterprises
IFC	International Finance Corporation
JICA	Japan International Cooperation Agency
JMP	Joint Monitoring Programme
KHR	Cambodian Riel
KII	Key Informant Interview
MDG	Millennium Development Goals
MEF	Ministry of Economy and Finance
MISTI	Ministry of Industry, Science, Technology & Innovation
MLMUPC	Ministry of Land Management, Urban Planning and Construction
MOE	Ministry of Environment
MOI	Ministry of Interior
MPWT	Ministry of Public Works and Transport
MRD	Ministry of Rural Development
NCDD	The National Committee for Sub-National Democratic Development

NDA	National Designated Authorities
NGO	Non-Government Organization
NIS	National Institute of Statistics
OECD	The Organisation for Economic Cooperation and Development
PDB	Planted Drying Beds
PDRD	Provincial Department of Rural Development
PPWSA	Phnom Penh Water Supply Authority
PWG/RWSSH	Provincial Working Group for Rural Water Supply, Sanitation and Hygiene
PWO	Private Water Operators
SDG	Sustainable Development Goals
SME	Small and Medium Enterprise
SNA	Sub National Authority
SWTPU	Sewerage and Wastewater Treatment Plant Unit
UN	United Nations
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
USD	United States Dollars
WASH	Water, Sanitation and Hygiene
WB	World Bank
WHO	World Health Organization
WWTP	Wastewater Treatment Plant

Executive summary

Introduction

This strategy outlines the options and measures to be undertaken by the Kingdom of Cambodia to raise the finances required to reach its targets for rural and urban sanitation by 2030.

Methodology

The strategy was developed between August 2023 and May 2024, through a joint effort, led by the Ministry of Rural Development (MRD) and the Ministry of Public Works and Transportation (MPWT), involving four workshops and interviews with over 50 stakeholders. The methodology involved mapping financial flows in the sector, projecting the cost of services and a financial gap analysis.

Part 1: Cambodian context

In 2022, the Cambodia SDGs (CSDGs) were revised and targets were set for sanitation: 6.2.1 Proportion of population (households) using safely managed sanitation services – 50 per cent by 2030; 6.2.1.1 Proportion of rural population (rural households) have basic access to sanitation services – 100 per cent by 2030.

At present, 71 per cent of the population in rural areas has access to at least basic sanitation services, of which, 34 per cent access safely managed sanitation services. In urban areas, 93 per cent of the population has access to at least basic sanitation, of which, 45 per cent access safely managed sanitation services (WHO/UNICEF JMP 2023).

The cost of not investing in sanitation service delivery is high. A 2008 World Bank study in Cambodia found that poor sanitation leads to an economic loss of USD 448 million per year, which translates to approximately USD 32 per capita. Using the 2023 Gross Domestic Product (GDP) deflator¹, this loss is equivalent to USD 620 million per year or USD 44.3 per person, amounting to 2.1 per cent of the GDP.

The Cambodia Vision 2030 sets the ambitious target of becoming an upper middle-income country by 2030 and a high-income country by 2050. Before the pandemic, the country's annual average growth was more than 7 per cent. However, the GDP growth decreased to 3.1 per cent in 2020. In 2023, the World Bank had projected a GDP growth of 5.4 per cent.

The MPWT is responsible for sanitation in urban areas, and the MRD focuses on on-site sanitation systems in rural areas.² The Ministry of Environment (MOE) is tasked with environmental monitoring, pollution control and overseeing the effluent quality from wastewater treatment plants (WWTPs) to ensure compliance with standards.

1. A deflator ensures that the currency used in 2008 has the same value as in 2023, making them comparable taking into account the economic development of the country. It does not account however for 1) improvements made in the sanitation sector, which have a positive impact, leading to lower costs of inaction or for 2) population growth, which affects negatively, leading to higher costs of inaction.

2. It is noted that a new WASH policy is currently under preparation and may result in changes to institutional mandates regarding faecal sludge management.

Poor coordination among different actors, along with capacity related challenges due to lack of required skills and competences to deliver the mandates, further complicates an already complex institutional landscape (WB, 2023). Despite various laws and policies to promote decentralization, the extent of fiscal decentralization (i.e. the share of budget and authority placed under Sub National Authority (SNA) compared with the national level) has been limited and uneven.

Part 2: Sources of finance and the sanitation finance gap

Sector expenditure

The total, average annual³ expenditure on sanitation⁴ from public funding totals USD 23.4 million. This total expenditure is the sum of expenditures by national government, sub-national governments, development partner grants and development partner loans. This does not include household expenditures.

Funding source: Taxes

MRD's expenditure on sanitation, from the national budget, averages USD 0.6 million over the last three years (0.9 per cent of the MRD's budget). MPWT's expenditure on sanitation from the national budget averages USD 5 million (3.3 per cent of the MPWT's budget). It is estimated that sanitation expenditure, from sub-national administration budgets, (district and commune levels) will be USD 197,000 in 2024. There is no expenditure on sanitation from revenue raised by sub-national administrations.

Funding source: Tariffs (paid by consumers, including self-supply)

Households are estimated to spend an average of USD 327 million per year on sanitation capital expenditure (CapEx), either through self-supply or tariffs. In addition, households are paying for all the capital maintenance costs (CapManEx) and operating costs (OpEx), except for those households that are connected to sewerage with treatment, which is subsidized. It is estimated that households spend USD 191 million per year on capital maintenance (CapManEx) and USD 326 million per year on operations (OpEx).

Funding source: Transfers from development partners (aid) and concessional finance

As per the Organisation for Economic Cooperation and Development (OECD) database, the average annual value of grants allocated to sanitation in Cambodia, from 2016 to 2021⁵ was USD 3.2 million.

As per the OECD database, the average annual value of loans allocated to sanitation in Cambodia from 2016 to 2021⁶ was USD 14.2 million. This represents 66 per cent of the overall funding sources (excluding household contributions). No loans were identified for sanitation from national finance institutions. No national public development banks were identified as operating in the sub-sector.

3. 'Current ODA' data is the average annual funding from 2016 to 2023. 'National budget spent' data is based on average annual allocations from MEF from 2013-2023. Refer to Annex 2 and Annex 3 for full details on sources and assumptions.

4. Data on funding for sanitation relates to at least basic sanitation as it is not possible to disaggregate funding between basic sanitation and safely managed sanitation.

5. At the time of the analysis the latest available data in the OECD database was for the year 2021.

6. At the time of the analysis the latest available data in the OECD database was for the year 2021.

Conclusions on the main sources of finance and implications

Households are the largest source of finance for urban and rural sanitation. The second largest source of finance is transfers from development partners. The third largest source of finance is from the national budget. The smallest source for sanitation is sub-national administration budgets.

Given that Cambodia is well on track to become a middle-income country by 2027 and GDP growth is estimated to increase at least 5 per cent per year, there is space within the public allocations to increase the expenditure on sanitation from the present 0.08 per cent to the minimum required of 1.5 per cent (for capital costs only - Capital Expenditure - CapEx, and Capital Maintenance Expenditure, CapManEx). The economic and societal gains of such an investment will be much higher. A meta-analysis assessing the actions countries took in response to the pandemic found that public investment in the water and sanitation sector had an average fiscal multiplier of 0.8 within a year, and approximately 1.5 to 2 within 2–5 years (GI Hub 2020 in WB 2024b).

Sanitation finance gap: Life-cycle costs to reach the CSDG 6 targets on sanitation

The total life-cycle cost of reaching the national targets for sanitation is estimated at USD 935 million per year.

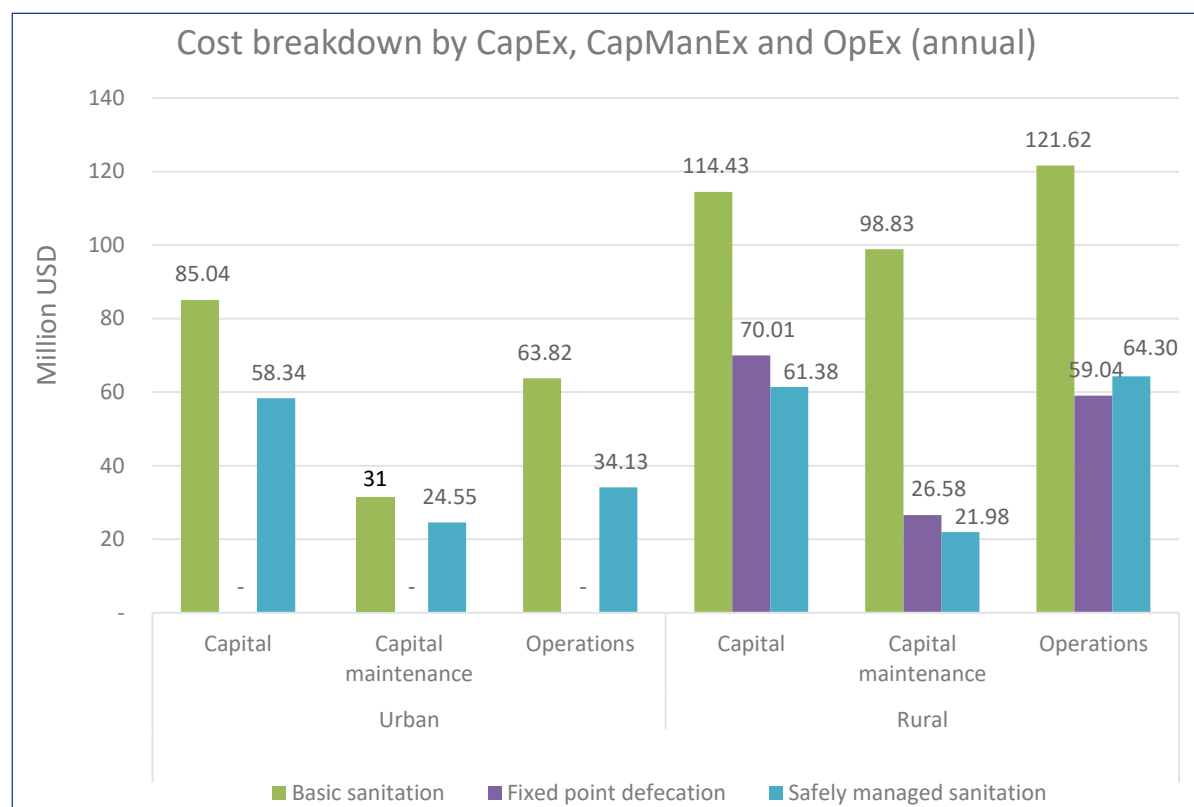


FIGURE 1: ANNUAL COSTS OF REACHING ENTIRE POPULATION WITH DIFFERENT SERVICE LEVELS BY 2030, BY MAIN COST COMPONENT, IN USD MILLION

Financial gap to reach the CSDG 6 targets on sanitation

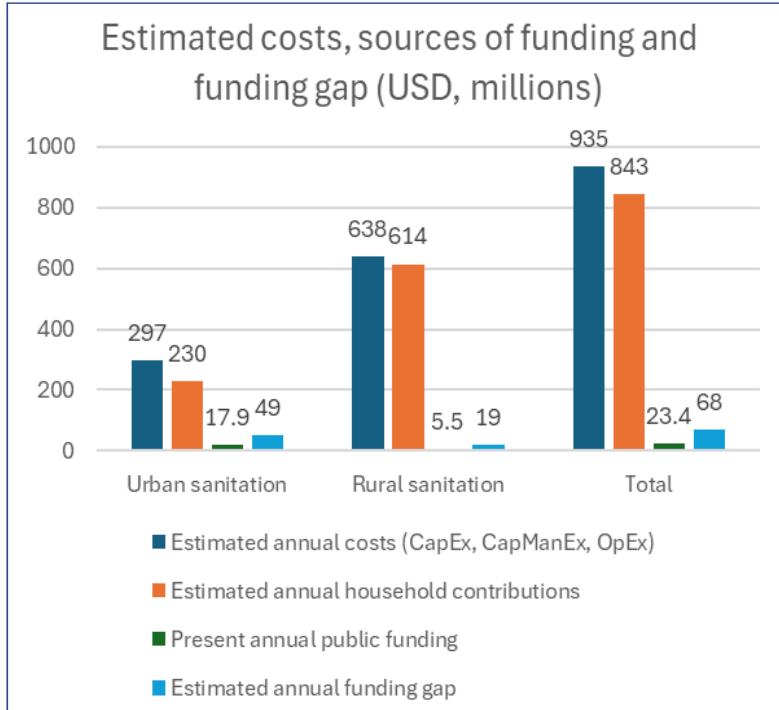


FIGURE 2: ESTIMATED RURAL AND URBAN SANITATION COSTS, SOURCES OF FUNDING AND FUNDING GAP (IN USD MILLION)

The total annual funding gap to meet the national sanitation targets is estimated at USD 68 million (USD 49 million for urban and USD 19 million for rural). The funding gap is calculated based on the total annual cost (CapEx, CapManEx and OpEx) minus the assumed household contributions and available public funding.

The foundations required to attract additional finances for sanitation

A systems approach has been used for the analysis of the bottlenecks, or foundational issues, in to attract more finance for sanitation (Pories, 2019). This approach assumes that addressing only one or two bottlenecks will not be enough to see the required financial changes in the sector. The red bottlenecks need to be addressed first to enable some of the options explored in the finance strategy. They are necessary conditions to raising more finances.

TABLE 1 ASSESSMENT OF THE FOUNDATIONAL ELEMENTS REQUIRED TO ATTRACT ADDITIONAL FINANCE AND PRIORITY INTERVENTIONS FOR THE CAMBODIA SANITATION SUB-SECTOR

Foundational Elements Required to Attract Additional Finance	Urban Sanitation	Rural Sanitation
Government Level		
1. Finance strategies and policy	Yellow	Yellow
2. Tariff setting and economic regulation	Yellow	Yellow
3. Regulation and accountability mechanisms	Red	Yellow
4. Clarity of mandate and obligations of service providers	Red	Green
Service Provider Level		
5. Service providers' financial and operational management	Red	Green
6. Business planning and client acquisition	Yellow	Yellow
7. Autonomy and legal framework	Yellow	Green
Suppliers of Finance Level		
8. Commercial/ Public Development Bank risk profile	Yellow	Yellow
9. Market distortions	Green	Green
10. Development funds crowding out private investments	Green	Green

Source: Authors

Part 3: Closing the sanitation finance gap

Options for closing the sanitation finance gap

The finance strategy outlines 15 options to raise between USD 58 million and USD 123 million per year, in sanitation finance, in Cambodia. For several of the options, insufficient information is available to make a robust estimate of the funds that could be raised. Therefore, the total figures underestimate the volume of finance that can be raised with these options. Nevertheless, the options that have been costed are the most realistic ones and the finances that can be generated from the costed options are sufficient to close the funding gap.

TABLE 2 OPTIONS FOR CLOSING THE SANITATION GAP IN CAMBODIA (USD)

Options		Minimum Range Per Year USD	Maximum Range Per Year USD
Increase Efficiency of Available Funds			
1	Subsidy targeting	4,000,000	6,000,000
2	Ring-fencing the 10% sanitation fee in Phnom Penh	4,000,000	4,000,000
3	Develop asset management plans for WWTPs	Not estimated	Not estimated
4	Support local authorities with options and costs for adequate budgeting processes and cost reduction	Not estimated	Not estimated
5	Use of decentralized sanitation solutions in cities/ towns	Not estimated	Not estimated
6	Phased approach to Faecal sludge treatment plant (FSTP) development	Not estimated	Not estimated
7	Create a sanitation budget code to track and monitor sanitation funding flows	Not estimated	Not estimated
Mobilize Additional Funds			
8	Collecting a sanitation levy in all cities through combined sanitation and piped water bills	27,000,000	55,000,000
9	Increasing the rate of the wastewater/sanitation levy		
10	Reallocation of revenue from existing specific taxes to sanitation and wastewater	20,000,000	40,000,000
11	Climate Finance	1,000,000	10,000,000
12	Increase line ministry budget allocations to sanitation	1,000,000	6,000,000
13	Designate sanitation as an obligatory function of sub-national authorities	400,000	1,000,000
14	Enforce and increase penalties for breaching national standards on wastewater discharge	250,000	500,000
Increase Repayable Finance			
15	Access repayable finance from public development banks for sanitation	Not estimated	Not estimated
Total		57,650,000	122,500,000

Conclusions on the options to reduce the sanitation finance gap

There is political support and ongoing work to address several options to reduce the gap in sanitation finance. For instance, efforts to reform sanitation tariffs are in progress (options #1, #2 and #9). MRD is planning to double the sanitation budget for next year (option #12) and the MEF is considering making sanitation an obligatory function under the social services budget (options #13). Additionally, proposals for climate finance have been submitted to climate funds (option #11).

An implementation plan for this sanitation strategy will be developed to phase the roll-out of various options. This plan will identify the lead ministry responsible for each action and distinguish between short- and medium-term priorities. Progress on the implementation plan will be reviewed regularly.

1. Finance strategy for the sanitation sector

This strategy document outlines the options and measures to be undertaken by the Kingdom of Cambodia to reach its targets for rural and urban sanitation by 2030.

1.1 Introduction

At present, 71 per cent of the population in rural areas has access to at least basic sanitation services, of which 34 per cent access safely managed sanitation services. In urban areas, 93 per cent of the population has access to at least basic sanitation, of which 45 per cent access safely managed sanitation services (WHO/UNICEF JMP 2023).

For 2030, the Kingdom of Cambodia targets to provide basic access to sanitation services to 100 per cent of the rural population, safely managed sanitation services to 50 per cent of the population, safely treat 70 per cent of industrial wastewater and safely treat 45 per cent of wastewater from urban areas.

Safely managed sanitation refers to the use of an improved sanitation facility, which is not shared with any other household, and where excreta are either:

- (1) treated and disposed in-situ (in the place where it is kept); or
- (2) transported and treated off-site; or
- (3) transported through a sewer to a treatment facility.

Safely managed sanitation aims to ensure that the potential health and environmental risks associated with faecal sludge are minimized throughout the entire sanitation service chain. Sanitation service chain refers to the collection, containment, conveyance, treatment and disposal of faecal sludge (MRD, 2020).

Financial gaps have been a major hindrance in the achievement of the CSDG 6 targets.

1.2 Methodology

The finance strategy for sanitation has been developed in five steps. The content and methods of each step are summarized below.

TABLE 3 METHODOLOGY FOR THE DEVELOPMENT OF THE FINANCE STRATEGY

Main Steps	Key Activities
Step 1: Identifying finance flows and sources of finance	Map all financial flows in the sector. Quantify using the WASH Accounts framework adapted to the sanitation chain, drawing on data from existing datasets, KII and reports.
Step 2: Projecting the cost of services	Review existing cost estimates, modelling based on data from both national, provincial and district sanitation plans and reports.
Step 3: Identifying gaps	Analyse financial gap, interpreting/validation with key stakeholders using CSDG 6 costing tool adapted to sanitation.

Main Steps	Key Activities
Step 4: Identifying opportunities and barriers to reduce the gap	Do a qualitative analysis of the foundational factors required to mobilize additional funds, based on document review and interviews.
Step 5: Creating the Finance strategy	Identify potential strategies, quantitative modelling of potential to reduce the gap.

In total, over 50 stakeholders have been consulted at national and provincial level (Annex 1) and four validation workshops were conducted between August 2023 and May 2024.

1.3 Key terminology used in the finance strategy

The main terminology used in the finance strategy is related to the life-cycle cost of services and the sources of funds (WHO, 2020).

1.3.1 Life-cycle costs of services

There are six key life-cycle costs to ensure sustainable service delivery. These are summarized in Figure 3.



FIGURE 3: THE SIX LIFE-CYCLE COST CATEGORIES FOR SUSTAINABLE SERVICE DELIVERY (WHO, 2020)

Capital expenditure – hardware and software (CapEx): The capital invested in constructing fixed assets, such as concrete structures, pumps and pipes. Investments in fixed assets are occasional and ‘lumpy’ and include the costs of initial construction and system extension, enhancement, and augmentation. CapEx software includes one-off work with stakeholders prior to construction or implementation, extension, enhancement, and augmentation (such as costs of one-off capacity building).

Capital maintenance expenditure (CapManEx): Expenditure on asset renewal, replacement and rehabilitation costs, based upon serviceability and risk criteria. CapManEx covers the work that goes beyond routine maintenance to repair and replace equipment to keep systems running. Accounting rules in the country may guide or govern what is included under capital maintenance and the extent to which broad equivalence is achieved between charges for depreciation and expenditures on capital maintenance. Capital maintenance expenditures and potential revenue streams, to cover those costs, are critical to avoid the failures represented by haphazard system rehabilitation.

Cost of capital (CoC): The cost of financing a programme or project, considering loan repayments and the cost of tying up capital. In the case of private sector investment, the cost of capital includes an element distributed as dividends.

Operating and minor maintenance expenditure (OpEx): Expenditure on labour, fuel, chemicals and materials. Most cost estimates assume OpEx runs at between 5 per cent and 20 per cent of capital investments. Minor maintenance is routine maintenance needed to keep systems running at peak performance but does not include major repairs.

Expenditure on direct support (ExpDS): Includes expenditure on post-construction support activities direct to local-level stakeholders, users or user groups. In utility management, expenditure on direct support such as overheads is usually included in OpEx. These costs, however, are rarely included in rural water and sanitation estimates. The costs of ensuring that local government staff have the capacities and resources to help communities when systems break down or to monitor private sector performance are usually overlooked.

Expenditure on indirect support (ExpIDS): Macro-level support, planning and policy making that contributes to the enabling environment for service provision, but is not particular to any programme or project. Indirect support costs include government macro-level planning and policymaking, developing and maintaining frameworks and institutional arrangements, and capacity-building for professionals and technicians.

1.3.2 Sources of funds

Taxes

Taxes refer to funds originating from domestic taxes that are channelled to the sector via transfers from all levels of government, including national, regional and local. Such funds would typically be provided as subsidies, for capital investment or operations. ‘Hidden’ forms of subsidies may include tax rebates, soft loans (i.e. at a subsidized interest rate) or subsidized services (e.g. subsidized electricity).

Tariffs

Tariffs are funds contributed by users of WASH services for obtaining the services. Users generally make payments to service providers for getting access to and for using the service. When the service is self-provided (e.g. when a household builds and operates its own household latrine), the equity invested by the household (in the form of cash, material or time – ‘sweat equity’) would also fall under ‘tariffs’.

Transfers

Transfers refer to funds from international donors and charitable foundations (including NGOs, decentralized cooperation or local civil society organizations) that typically come from other countries. These funds can be contributed in the form of grants, concessionary loans (i.e. loans that include a ‘grant’ element in the form of a subsidized interest rate or a grace period) or guarantees.

Concessional finance

Concessional finance is a loan borrowed from a development bank with lower interest rates, longer tenure and grace periods (when compared to commercial loans). The borrowers are usually government entities. Development banks also have private sector arms, such as IFC of the World Bank Group that can lend to non-sovereign borrowers.

Commercial finance

Commercial finance is borrowing of a sum of money from a commercial bank with the understanding that the loan will be repaid on the agreed schedule. This includes microfinance institutions. Commercial banks will likely require collaterals for a simple commercial loan. Guarantees, grants, and other tools can be combined with a simple commercial loan to make it more viable.

1.4 Currency

The currency used in this document is US dollars. For currency exchange when required, Cambodian Riel (KHR) has been used at a rate of 4,100 per USD.

1.5 Outline of the sanitation finance strategy



Part I

**Sanitation finance strategy:
Cambodian context**

2. Objectives, scope and sanitation targets for Cambodia

2.1 Cambodia SDG 6

In 2016, the CSDG Goal 'Ensure availability and sustainable management of water and sanitation for all' was established (CSDGs, 2016-2030). This goal included two targets relevant to safely managed sanitation:

- **Target 6.2** By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations". The target value was set at 50 per cent by 2030 and MRD was given responsibility for this target. The indicator was set as "Indicator: 6.2.1 Proportion of population using safely managed sanitation services, including a handwashing facility with soap and water." The definition was set as "Based on global definitions: Proportion of rural population using a basic sanitation facility at the household level, (improved sanitation facilities used for MDG monitoring i.e. flush or pour flush toilets to sewer systems, septic tanks or pit latrines, ventilated improved pit latrines, pit latrines with a slab, and composting toilets, the same categories as improved sources of drinking water used for MDG monitoring) which is not shared with other households and where excreta is safely disposed in situ or treated off-site".
- **Target 6.3** By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally". The target value was set at 50 per cent by 2030, and the indicator was set at "6.3.2 Proportion of wastewater safely treated".

In 2022, the CSDGs were revised, and a change was made to the indicators for Target 6.2 and Target 6.3 by updating the indicators and targets as follows:

- 6.2.1 Proportion of population (households) using safely managed sanitation services - 50 per cent by 2030
- 6.2.1.1 Proportion of rural population (rural households) have basic access to sanitation services – 100 per cent by 2030
- 6.2.1.2 Proportion of rural households have facilities for washing hands with soap – 100 per cent by 2030
- 6.3.1 Proportion of wastewater (industrial wastewater) safely treated (based on national standard) - 70 per cent by 2030
- 6.3.2 Proportion of wastewater (from capital city, municipalities, and urban areas) safely treated (based on national standard) - 45 per cent by 2030

2.2 Nationally Determined Contributions (NDCs) and climate risk assessments

Cambodia approved the 'National Adaptation Plan' in 2006 and updated its 'Nationally Determined Contributions' in 2020. Out of 58 priority actions, only one deals with sanitation and hygiene at schools and health care facilities.

In 2019, MRD established the sector plan for rural WASH services and targets for resilient infrastructure for community-managed water supply systems, latrines, boreholes and wells, and WASH facilities at schools and hospitals. The plan, however, does not make a detailed assessment of the impact of hazards, the level and extent of exposure, and does not identify vulnerable groups and zones or its cost (UNICEF, 2023).

The climate shocks and stresses result in damaged infrastructure, which in turn leads to poor quality service delivery to the population. Considering the present level of access to WASH services, 43 per cent of communes in the country are highly vulnerable to climate change (UNICEF, 2023).

Floods can inundate pit latrines and septic tanks. Water scarcity may result in decreased use, functionality, and hygiene standards of water-based toilets, due to unavailability of enough water to flush or clean toilets. Women and girls are then also forced to travel further to access toilets, because it is not safe for them to defecate in the open. This increases the risk of gender-based violence. Another impact of climate change is an increase in waterborne diseases, which affect vulnerable people disproportionately (UNICEF, 2023). Untreated sewerage discharge in urban areas makes this worse. In Cambodia, there is limited understanding about the linkages between sustainable wastewater management and climate change adaptation and mitigation.

The Green Climate Fund has accepted a readiness proposal submitted by MoE/MPWT/UN-Habitat aimed at revising the national policy, enhancing understanding of climate change impacts, and building capacity among the National Designated Authority (NDA) and private stakeholders.

The initiative focuses on mitigating climate change impacts through improved solid waste and wastewater management in Preah Sihanouk (Sihanoukville) and Krong Kaeb (Kep). The primary beneficiaries include technical officials from the Ministry of Environment, the Ministry of Public Works and Transport, as well as officials from their provincial departments and local authorities in Sihanoukville and Kep. Special emphasis is placed on enhancing the capacity of female government staff (GCF, 2021).

2.3 Cost of inaction

The cost of not investing in sanitation service delivery is high. A World Bank study in Cambodia, from 2008, found that poor sanitation leads to economic loss of USD 448 million per year which translates to per capita loss of approximately USD 32. Using a GDP deflator for 2023⁷, this loss is equivalent to USD 620 million per year or USD 44.3 per person, or 2.1 per cent of the GDP lost. A more recent report from 2014 estimated that poor quality sanitation costs Vietnam the equivalent of 1.3 percent of its GDP, the Philippines 1.5 percent of its GDP, and Indonesia 2.3 percent of its GDP per year (WB, 2014).

7. A deflator adjusts the currency used in 2008 to the same value level as 2023, making them comparable and taking into account the economic development of the country. It does not account however for 1) improvements made in the sanitation sector, which have a positive impact, leading to lower costs of inaction or for 2) population growth, which has a negative impact, and leads to higher costs of inaction.

The economic losses were estimated by considering the health impacts and the costs associated with polluted water. Health impacts constitute the largest portion, accounting for 42 per cent of the total economic costs. Within the health impacts, the cost of premature deaths is the predominant factor, contributing to more than 90 per cent of these costs. This is primarily due to the high number of child deaths resulting from diarrhoea and diseases related to malnutrition caused by diarrhoea.

The next major contributor to the economic losses is the cost of water, which accounts for 33 per cent of the total. This includes the expenses associated with accessing cleaner drinking water, other domestic water uses, and the loss in fish production due to polluted water. Additionally, the tourism sector incurs costs estimated at 16 per cent of the total losses. The economic loss resulting from time lost due to unimproved sanitation constitutes approximately 9 per cent of the total economic costs. This cost is incurred by individuals practicing open defecation (journey time) and shared toilet users (waiting time).

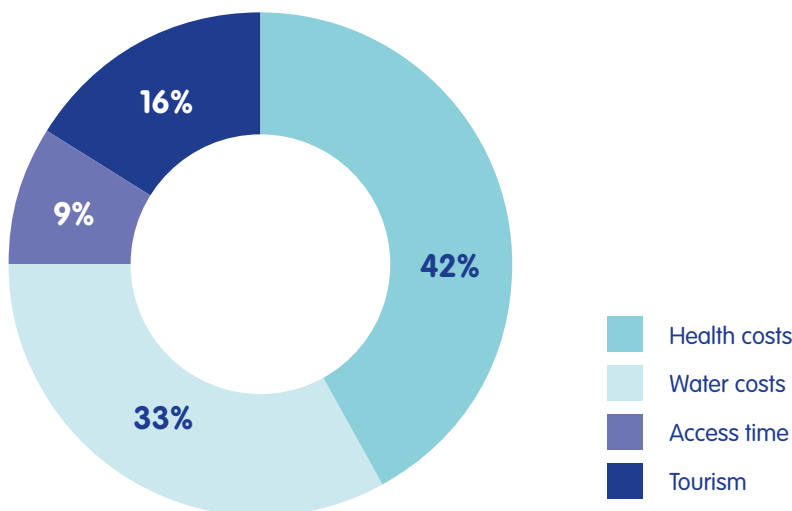


FIGURE 4: ESTIMATED ECONOMIC LOSS OF POOR SANITATION AND HYGIENE IN CAMBODIA (WB, 2008)

Specifically, the availability of clean WASH facilities, overall health facility cleanliness, and the appropriate management of healthcare waste are crucial for reducing the risks of spreading diseases. Healthcare-associated infections (HAIs) impose a significant and preventable health burden. It is estimated that approximately 20 per cent of all global deaths are due to sepsis, amounting to around 11 million potentially avoidable deaths per year. Water, sanitation, healthcare waste management, and environmental cleaning services play a key role in mitigating HAIs. A recent study estimated that in Eastern and Southern Africa, there were approximately 3.1 million healthcare-associated infections in 2022, resulting in over 320,000 excess deaths and costing at least USD 6 billion (WB, 2024).

The above costs do not consider climate related events. In 2015, adverse climatic events have cost Cambodia USD 1.5 billion in losses and damages (10 per cent of the country’s GDP) (USAID, 2019).

On the other hand, each USD1 invested in sanitation is estimated to yield an economic return of USD 5.5, with returns in East Asia estimated to be higher, at USD 8 (WHO, 2012).

3. Cambodia finance context and sanitation sector performance

3.1 Cambodia broader finance context

The Cambodia Vision 2030 sets the ambitious target of becoming an upper middle-income country by 2030 and a high-income country by 2050.

Prior to the pandemic, the country's growth had averaged more than 7 per cent annually. In 2020, GDP growth declined to 3.1 per cent, with World Bank projections for 2023 estimating a growth rate of 5.4 per cent.

According to the National Bank of Cambodia's annual report for 2023, the country's overall inflation was 2.1 per cent and it is expected to stay low.

3.2 Sanitation sector performance towards CSDG 6 in 2030

Access to at least basic services⁸ has been growing steadily since 2000, with household access to sanitation services improving in both rural and urban settings. In rural areas, access to at least basic sanitation increased from 46 per cent to 71 per cent between 2015 and 2022. A similar trend can be seen in urban areas, where the proportion of households with at least basic services has improved. Over the same seven-year period, sanitation related services increased from 81 per cent to 93 per cent (WHO/UNICEF JMP 2023). By definition, the basic services do not necessarily entail climate resilience, and most of these gains might be lost during emergencies and climatic shocks (UNICEF, 2023).

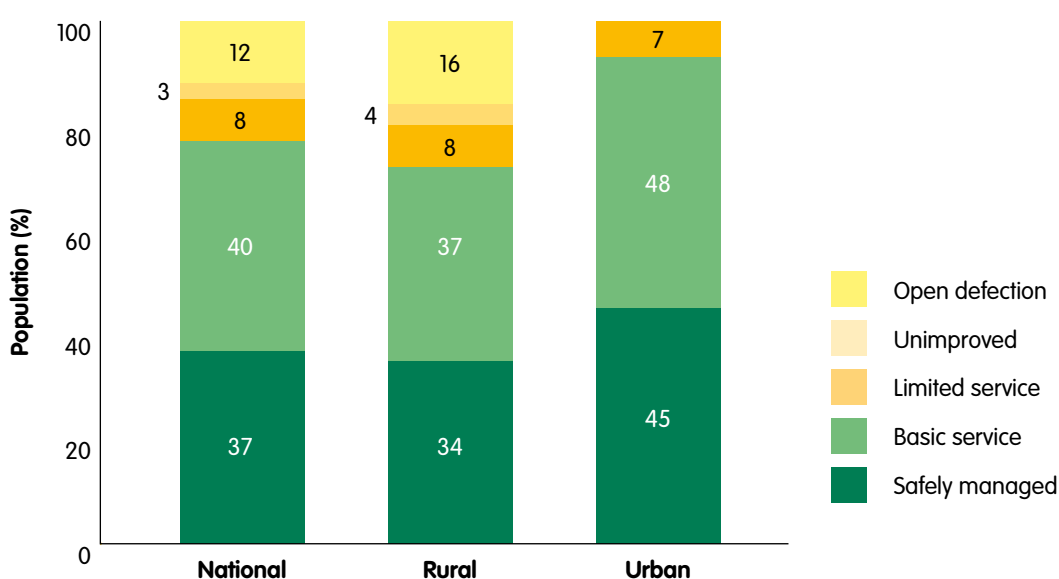


FIGURE 5: SANITATION HOUSEHOLD SERVICE LADDER, NATIONAL, URBAN, RURAL

Source: WHO/UNICEF JMP 2023

8. At least basic service is the combination of basic and safely managed services.

3.3 Institutions involved in the Sanitation Service Chain

The MPWT is responsible for sanitation in urban areas, and the MRD focuses on on-site sanitation systems in rural areas.⁹ The national arrangement is mirrored at the provincial levels, where MPWT, and MRD are represented by the DPWT and the Provincial Department of Rural Development. Within the MPWT the General Department of Sewerage and Wastewater Management (GDSWM) is responsible for the sewerage and wastewater sub-sector. Within the MRD, the Department of Rural Health Care is the lead for rural sanitation. The Ministry of Environment is mandated to undertake environmental monitoring and pollution control and monitor the effluent quality from WWTPs to meet standards. Poor coordination among different actors, along with capacity related challenges due to lack of required skills and competences to deliver the mandates, further complicates an already complex institutional landscape (WB, 2023).

Currently, only two units have been established to operate and maintain WWTPs (in Siem Reap and Preah Sihanouk municipalities). They are facing challenges in sustaining daily operations from revenue collection due to limitations in technical and managerial capacity and in human resources (WB, 2023).

In urban areas, onsite sanitation facilities are emptied on request by private service providers,¹⁰ most of whom operate without formal regulation. Recently, Phnom Penh City Hall started a process to register these operators. Emptying services are infrequent, and wastewater from on-site containment structures is discharged improperly, leading to public health and environmental hazards. Consequently, only a fraction of the contained waste is safely managed. It is estimated that only five per cent of faecal sludge generated in Phnom Penh (ADB, 2021), 18 per cent in the Siem Reap municipality (IRC, 2016) and none in Battambang municipality (WaterAid, 2018) is safely emptied and transported for treatment.

TABLE 4 INSTITUTIONAL ROLES AND RESPONSIBILITIES FOR SANITATION

	Policy and Planning	Monitoring	Capture and Containment	Emptying, Transportation	Treatment	Re-use
Urban Sanitation	Ministry of Land Management, Urban Planning and Construction (MLMUPC) MPWT – General Department of Sewerage and Wastewater Management	National Institute of Statistics (NIS) Ministry of Environment (MoE) MPWT	General Department of Sewerage and Wastewater Management (GDSWM) within MPWT manages and oversees wastewater, sewerage and drainage infrastructure	Municipalities, public and private utilities	Units established by Provincial Departments of Public Works and Transport, Phnom Penh City Hall	There is currently no reuse from the treatment plants

9. It is noted that a new WASH policy is currently under preparation and may result in changes to institutional mandates regarding faecal sludge management
10. The private sector was not found to be a source of funds. Households pay a service fee to the private sector and this expenditure is captured in estimates of household contributions.

	Policy and Planning	Monitoring	Capture and Containment	Emptying, Transportation	Treatment	Re-use
Rural Sanitation	Ministry of Rural Development (MRD) Ministry of Interior (Mol) for sub-national investment planning	National Institute of Statistics (NIS), MRD Provincial/District Working Group for water supply and sanitation hygiene (PWG/RWSSH)	Households, private sector, NGOs	Households, private sector, NGOs	Provincial government	

3.4 Challenges with decentralization and public financial management for sanitation

According to the 2019 sub-decrees, four functions were transferred from MRD to district/municipality administrations including the management and provision of rural sanitation. The Department of Rural Health Care of MRD works with the Department of Planning and Public Relations and the Department of Supply and Finance and PDRD to determine the budget needed for rural sanitation by using the Programme Informed Budget (PIB) and Budget Strategic Plan (BSP) as instructed by MEF. The process of transferring the budget shall follow the relevant rules and regulations with the district/municipalities administrations using their funds for repair and maintenance, depending on their annual budgeting plan approved by MEF (Government Prakas in annual budget) (WaterAid, 2023).

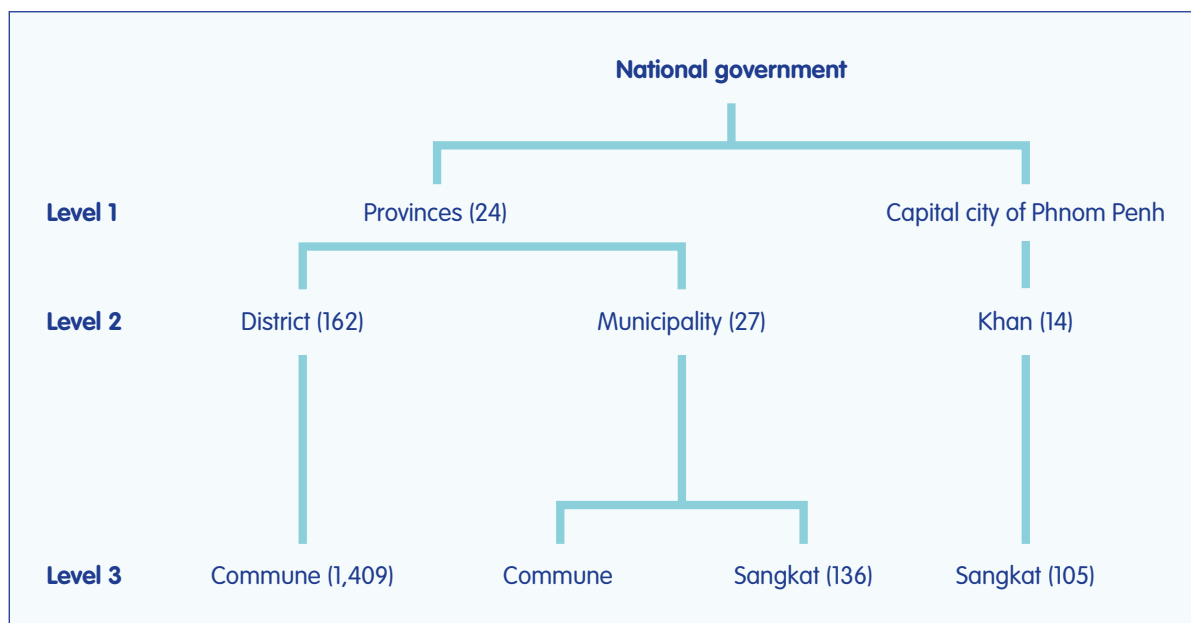


FIGURE 6: ADMINISTRATIVE STRUCTURE OF CAMBODIAN GOVERNMENT

Despite the various laws and policies to promote decentralization, in practice, the extent of fiscal decentralization (i.e. the share of budget and authority placed under SNAs compared with the national level) has been limited and uneven. In the sanitation sub-sector, the budget management at the sub-national level is also problematic. While the district/municipality level is intended as the main tier for service delivery, in reality, it receives the least resources and neither the district/municipalities or the provincial departments are given authority over capital expenditure, which is mostly under the responsibility of MPWT (WaterAid, 2023).

Part II

Sources of finance and the sanitation finance gap

4. Sector expenditure, funding and financing sources

4.1 Sector expenditure

4.1.1 Present public funding on sanitation

The total average annual expenditure¹¹ on sanitation¹² from public funding amounts to USD 23.4 million. This expenditure comprises contributions from the national government, sub-national governments, development partner grants, and development partner loans. It is important to note that household expenditure estimates are excluded from this analysis. For further details, refer to the information below and section 4.3.



FIGURE 7: PUBLIC FUNDING SOURCES FOR SANITATION, ANNUAL, IN USD MILLION

11. 'Current ODA' data is the average annual funding from 2016 to 2023. 'National budget spent' data is based on average annual allocations from MEF from 2013-2023. Refer to Annex 2 and Annex 3 for full details on sources and assumptions.

12. Data on funding for sanitation relates to at least basic sanitation as it is not possible to disaggregate funding between basic sanitation and safely managed sanitation.

4.1.2 Present sanitation expenditure as percentage of the GDP

In 2022, Cambodia's GDP was USD 29,599 million (National Bank of Cambodia, 2023). Currently, public expenditure on sanitation, including government expenditure and Official Development Assistance (ODA), represents 0.08 per cent of the GDP. In comparison, the average spending on water and sanitation in the East Asia and Pacific region is 0.6 per cent of the GDP (WB, 2024).

Cambodia is on track to graduate to a middle-income country by 2027 and the GDP is estimated to grow at least 5 per cent per year (ADB, 2024), the debt is not very high and there is fiscal space within the country to increase the expenditure on sanitation considerably.

4.2 Taxes (Government transfers from central budget)

4.2.1 Intergovernmental transfers to line ministries

Transfers from MEF to MRD and MPWT and the proportion of the Ministry budgets allocated to sanitation over the last three years are shown below in Table 5.

TABLE 5 CENTRAL BUDGET ALLOCATIONS TO SANITATION (USD)

Year	MRD			MPWT		
	Allocation from MEF	Proportion of total Budget Spent on sanitation	Sanitation budget	Allocation from MEF	Proportion of Total Budget Spent on sanitation	Sanitation budget
2021	71,847,000	0.90%	46,623.00	150,439,750		Not available
2022	70,451,750	0.90%	634,065.75	149,782,250	3.3%	5,000,000
2023	73,921,000	0.90%	665,289.00	156,923,750	3.2%	5,000,000

4.2.2 Intergovernmental transfers to sub-national administration

It is estimated that sanitation expenditure from sub-national administration budgets (district and commune levels) would be USD 197,000 in 2024 (source: key informant interview with MEF). These estimates are based on the assumption that 5 per cent of the sub-national administration social service budget will be allocated to sanitation (see Annex 3 for method used to calculate estimates which were validated with sub-national administrators). This decision is at the discretion of communes and districts based on their development plans.

4.2.3 Own revenues by sub-national administration

There is no expenditure on sanitation from revenue raised by sub-national administrations (source: key informant interviews at sub-national level).

4.3 Funding source: Tariff setting process along the sanitation service chain

4.3.1 Cost recovery targets along the sanitation service chain

Currently, there is no tariff policy for sanitation in Cambodia and no regulation on tariffs or tariff reviews. A draft sub-decree on a uniform tariff for water and wastewater services has been drafted and is currently being discussed by MEF, MPWT and MISTI.¹³ As a result, cost recovery targets are unclear and it is not known how much of the life-cycle costs are covered by current tariffs, although it is widely believed that current revenues fall short of covering operations costs.

4.3.2 Tariffs (Paid by consumers, including self-supply)

In Phnom Penh and Battambang, the fee for sanitation has been combined with the water bill. In Phnom Penh, the sanitation fee is set at 10 per cent of the water bill and in Battambang at 6.7 per cent. Details on the revenue generated from the tariffs in each city are not available.

In Siem Reap and Sihanoukville, the Sewerage and Wastewater Treatment Plant Units of the Provincial Departments of MPWT collect wastewater fees based on fees outlined in Prakas 293. The revenue generated from these fees was estimated to be around USD 65,000 per year in Siem Reap and USD 200,000 per year in Sihanoukville (GGGI, 2023).

In the finance gap calculations, it is assumed that all capital expenditure costs (CapEx) are paid by households and all the software costs are not paid by households (it is covered by subsidy from government, development partners etc.). This equates to a 10 per cent subsidy. This applies to all services except safely managed sanitation/urban services. For households in urban areas connected to a sewer, the subsidy on CapEx is estimated at 94 per cent. For households in urban areas with a septic tank and FSM, the subsidy on CapEx is estimated at 6 per cent (see Annex 2 on data sources and assumptions for more details). It is assumed that households are contributing on average USD 327 million per year, either in self-supply or as tariffs for sanitation capital expenditure (CapEx).

In addition, households are paying for all the capital maintenance costs (CapManEx) and operating costs (OpEx), except for households connected to sewerage with treatment, which is subsidized. It is estimated that households contribute USD 191 million per year to capital maintenance and USD 326 million to operations.

TABLE 6 HOUSEHOLD/CONSUMER CONTRIBUTIONS TO CAPEX, CAPMANEX AND OPEX FOR SANITATION (ESTIMATES)

Cost	Household/consumer contribution	USD, millions
OpEx		
Rural	100%	245
Urban	100% for basic sanitation	64
	50% for safely managed sanitation	17
Total Opex		326

¹³The consulting team have not been able to obtain information regarding the proposed tariff levels.

Cost	Household/consumer contribution	USD, millions
CapManEx		
Rural	100%	147
Urban	100% for basic sanitation	31
	50% for safely managed sanitation	12
Total CapMaEx		191
CapEx		
Rural	90%	221
Urban	90% for basic sanitation	77
	50% for safely managed sanitation	29
Total CapEX		327
Total household/consumer contribution		843

4.4 Funding source: Transfers from development partners (Aid)

As per the OECD database, the average annual value of grants allocated to sanitation in Cambodia from 2016 to 2021¹⁴ was USD 3.2 million.

An analysis was conducted of NGO expenditures on sanitation, using the Cambodia ODA Database of the Council for the Development of Cambodia (CDC). It was found that the dataset was incomplete¹⁵ and that there was a significant overlap between the data in the CDC database and the OCED database, as most NGO sanitation projects/programmes in Cambodia are donor funded. On this basis, NGO funding was not separately calculated. There is a small risk that this underestimates available finance, however, this is not considered to be significant at the scale of the national finance gap and strategy.

4.5 Financing source: Concessional finance

4.5.1 External sources of loans

As per the OECD database, the average annual value of loans allocated to sanitation in Cambodia from 2016 to 2021¹⁶ was USD 14.2 million. This represents 61 per cent of the overall funding sources (excluding household contributions).

Concessional finance is increasing in Cambodia, linked to its transition from a low-income to a middle-income country and most concessional lending in the sector is allocated to capital expenditure on urban wastewater and sewerage.

14. At the time of the analysis the latest available data in the OECD database was for the year 2021.

15. The Cambodia ODA database is built up by self-reporting of NGOs to the CDC. (ODA, nd)

16. At the time of the analysis the latest available data in the OECD database was for the year 2021.

4.5.2 Domestic sources of loans

No loans were identified for sanitation from national finance institutions (no national public development banks were identified as operating in the sub-sector). There are 58 commercial banks and nine specialized banks, but the data from the banks does not disaggregate information for water or sanitation¹⁷ (NBC, 2024).

Pit emptying operators access finance from commercial banks for purchase of large capital items such as trucks. Households take loans from microfinance institutions (MFIs) for construction of household latrines and septic tanks. There are 87 microfinance institutions and an additional 114 rural credit institutions registered from January 2024, but the data from the microfinance institutions does not disaggregate information for water or sanitation¹⁸ (NBC, 2024).

4.6 Conclusions on the main sources of finance and implications

Households are the largest source of finance for urban and rural sanitation. The second largest source of finance is transfers from development partners. Multilateral and bilateral aid (grants) is decreasing, and concessional finance is increasing, linked to Cambodia's transition from a low-income to a middle-income country.

The third largest source of finance is from the national budget. The Ministry of Rural Development allocates 0.9 per cent of its total budget for sanitation. The Ministry of Public Works and Transport allocates 3.3 per cent of its total budget for wastewater and sewerage. Normally, MEF allocations to line ministries increase modestly each year in line with national revenue, therefore these sources of finance are expected to remain steady. There is an option for the ministries to increase their internal allocations to sanitation.

Sub-national administration budgets for sanitation comprises the smallest source. Sub-national administration budgets for social services are projected to increase over the next five years, tied to overall growth in national revenue. The social service budget, however, is required to cover an array of services, one of which is sanitation.

Given that Cambodia is well on track to become a middle-income country by 2027, and the GDP growth is estimated to increase at least 5 per cent per year, there is space within the public allocations to increase the expenditure on sanitation from the present 0.08 per cent to the minimum required (for capital costs only) of 1.5 per cent.

The economic and societal gains of such investments will be much higher. A meta-analysis assessing the actions countries took in response to the pandemic found that public investment in the water and sanitation sector had an average fiscal multiplier of 0.8 within a year, and approximately 1.5 to 2 within 2–5 years (GI Hub 2020 in WB 2024b).

17. See National Bank of Cambodia. Latest available reports from 2022. www.nbc.gov.kh/english/economic_research/banks_reports.php

18. See National Bank of Cambodia. Latest available reports from 2022. www.nbc.gov.kh/english/economic_research/mfis_reports.php

5. The sanitation finance gap

5.1 Life-cycle costs to reach the CSDG 6 targets on sanitation

The annual life-cycle cost of reaching the national targets in urban and rural areas is represented in Figure 8. The figure shows the costs for both urban and rural areas and life-cycle costs are broken down by capital expenditure (CapEx), capital maintenance expenditure (CapManEx), and Operating costs (OpEx).

The total life-cycle costs of reaching the national targets for sanitation are estimated at USD 935 million per year. The total life-cycle costs of reaching the national targets in urban and rural areas are USD 297 million per year and USD 638 million per year, respectively.

The total capital costs (CapEx) of reaching the national targets for sanitation are estimated at USD 390 million per year (USD 144 million for urban and USD 246 million for rural). The total capital maintenance costs (CapManEx) are estimated at USD 202 million (USD 56 million for urban and USD 147 million for rural). The total operations costs (OpEx) are estimated at USD 343 million (USD 98 million for urban and USD 245 million for rural).

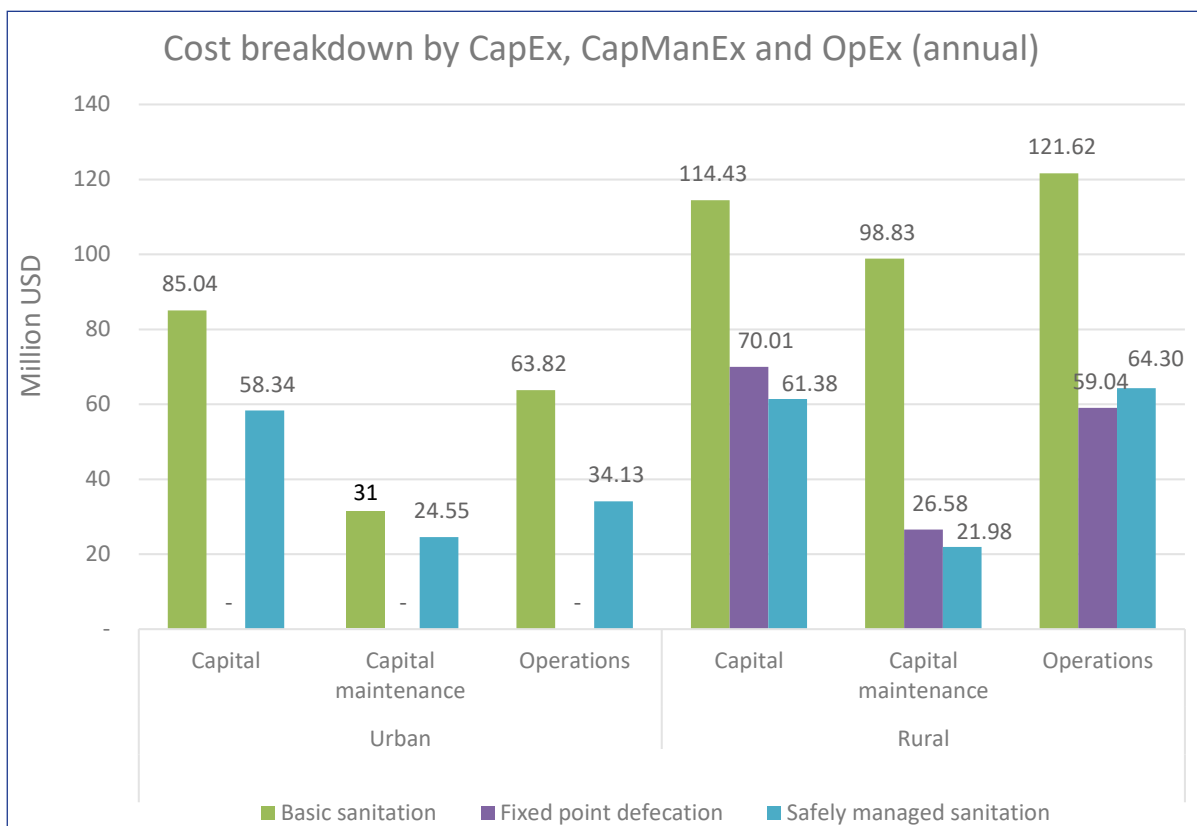


FIGURE 8: ANNUAL COSTS OF REACHING ENTIRE POPULATION WITH DIFFERENT SERVICE LEVELS BY 2030, BY MAIN COST COMPONENT IN USD MILLION

Figure 9 shows the annual capital costs (CapEx and CapManEx) of reaching the entire population to achieve universal access of different service levels by 2030, as a percentage of the GDP.¹⁹ It totals approximately 1.5 per cent of the GDP.

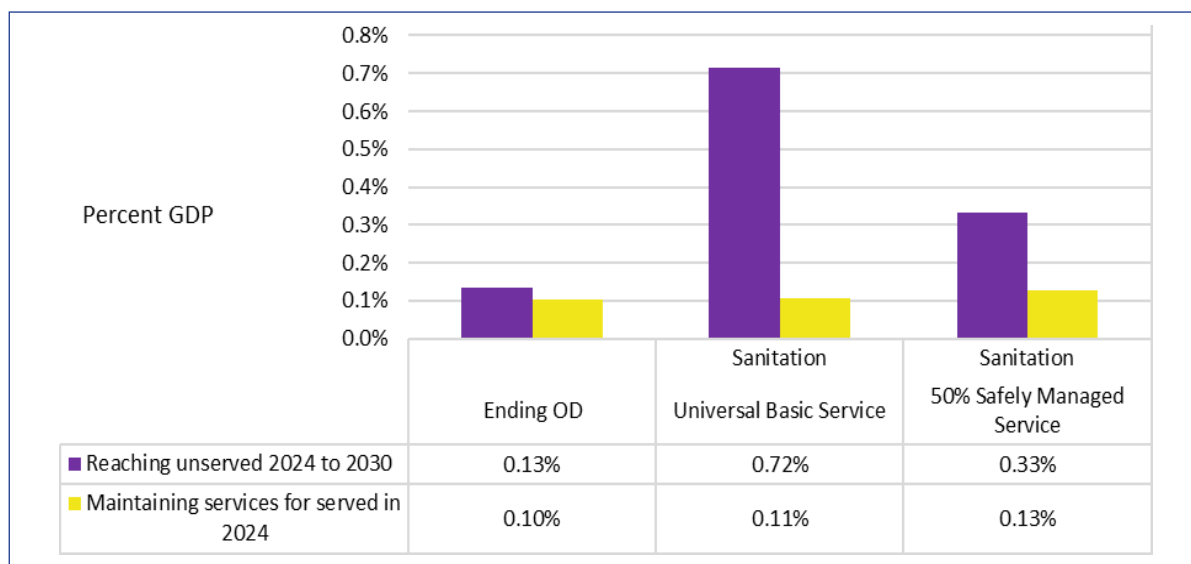


FIGURE 9: ANNUAL CAPITAL COSTS OF REACHING THE ENTIRE POPULATION TO ACHIEVE UNIVERSAL ACCESS OF DIFFERENT SERVICE LEVELS BY 2030, AS PERCENTAGE OF THE GDP

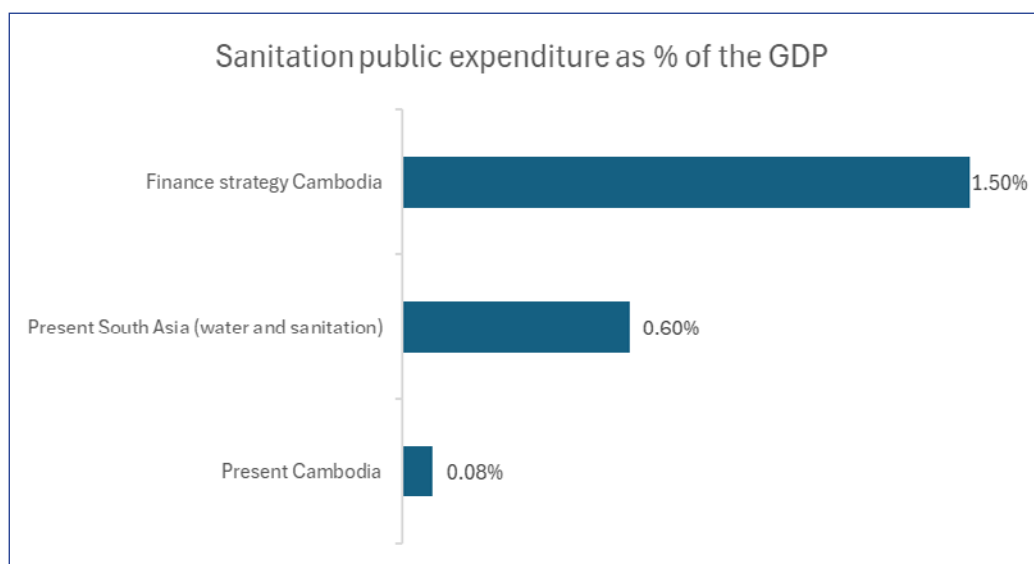


FIGURE 10: SANITATION PUBLIC EXPENDITURE AS THE PERCENTAGE OF THE GDP

19. In terms of the sanitation service chain, the costing for safely managed sanitation covers up to the safe disposal step. Costs of reuse are not included.

5.2 Financial gap to reach the CSDG 6 targets on sanitation

The total annual funding gap to meet the national sanitation targets is estimated at USD 68 million (USD 49 million for urban and USD 19 million for rural). The funding gap is calculated based on the total annual cost (CapEx, CapManEx and OpEx) minus the assumed household contributions and available public funding.

TABLE 7 ANNUAL FUNDING GAP TO REACH NATIONAL SANITATION TARGETS, USD MILLIONS

	Estimated annual costs CapEx, CapManEx, OpEx (USD, million)	Estimated household annual contributions (USD, million)	Present annual public funding (USD, million)	Estimated annual funding gap (USD, million)
Urban	297	230	17.9	49
Rural	638	614	5.5	19
Total	935	843	23.4	68

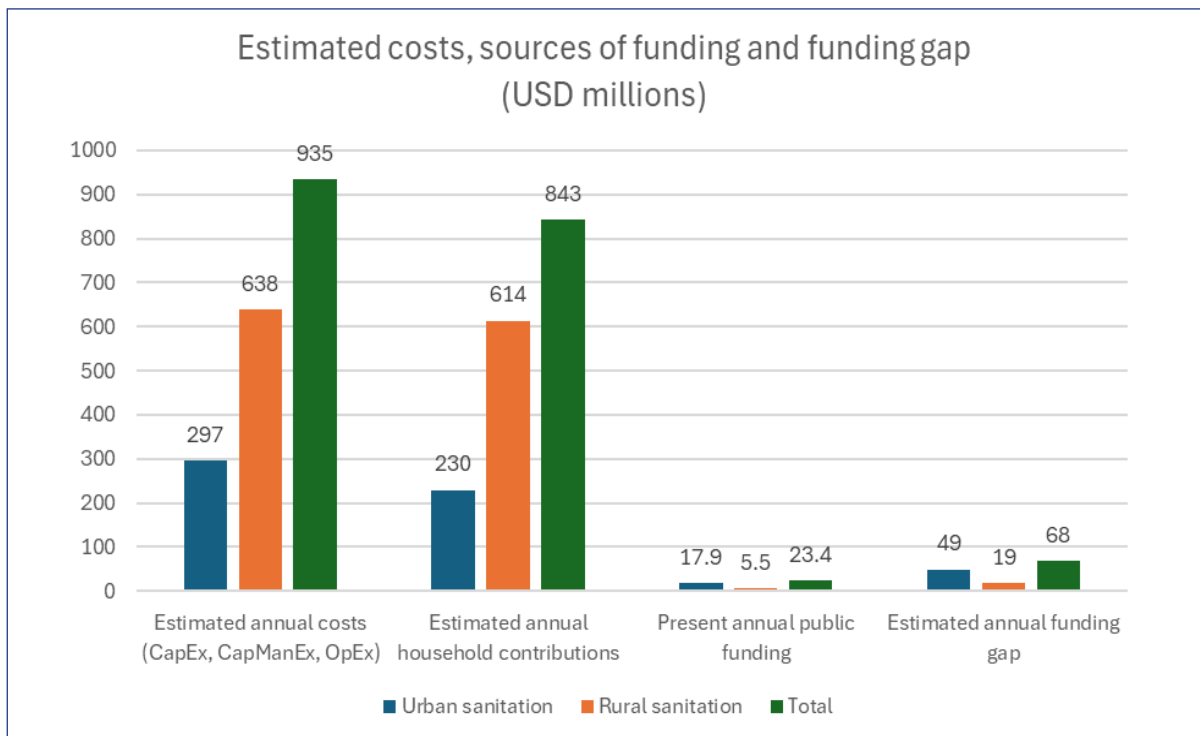


FIGURE 11: ESTIMATED COSTS, SOURCES OF FUNDING AND FUNDING GAP FOR SANITATION (USD MILLION)

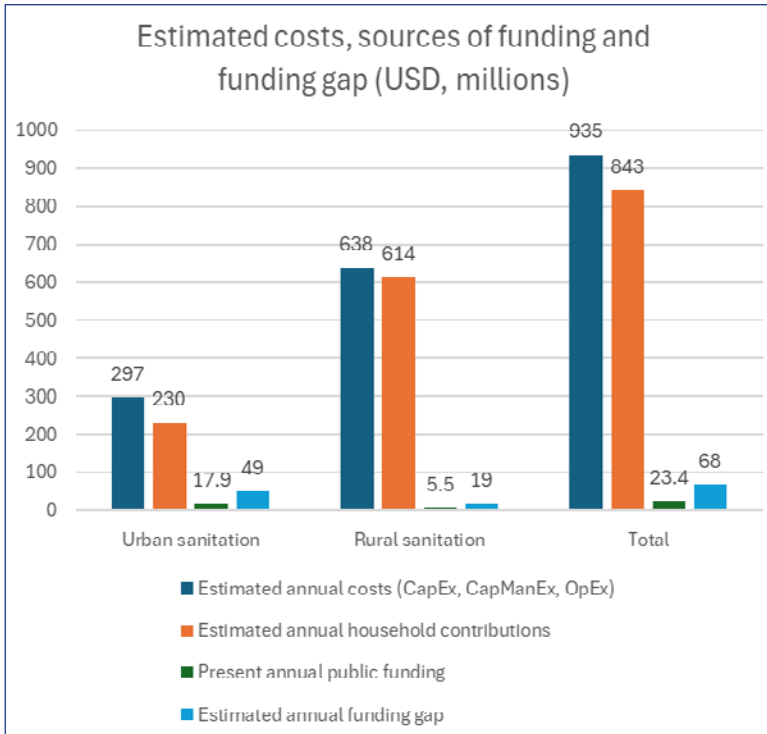


FIGURE 12: ESTIMATED RURAL AND URBAN SANITATION COSTS, SOURCES OF FUNDING AND FUNDING GAP (USD MILLION)

6. The foundations required to attract additional finance for sanitation

A systems approach has been used for the analysis of the bottleneck, or foundational issues to attract more finance for sanitation (Pories, 2019). This approach assumes that addressing only one or two bottlenecks will not be enough to see the required financial changes in the sector.

The ten critical foundational issues that have been assessed, are:

Sectoral access to finance:

1. Financing strategies and a system for maximizing funds to achieve social objectives
2. More effective tariff-setting practices and economic regulation
3. Adequate regulation and accountability mechanisms
4. Clarity of mandate and performance obligations of service providers

Service provider access to finance:

5. Solid financial and operational management
6. Capacity strengthening for business planning and client acquisition
7. Autonomy and legal framework

Suppliers of finance:

8. Addressing the mismatch between commercial bank risk profile and sector realities
9. Avoiding market distortions
10. Preventing development funds from “crowding out” private investment

Each of the foundational issues is given a traffic light colour coding:

	This specific area is blocking generation of additional finance and is a priority to be addressed with the finance strategy.
	The foundation is there, but it is not working optimally and can block the flow of finance.
	The foundation is in place and there are no constraints to raise additional finance.

The findings provide priority areas that can be discussed by country stakeholders to prioritize and develop concrete and feasible actions to attract and mobilize additional financial resources for the sector.

The red bottlenecks need to be addressed first to enable some of the options in the finance strategy. They are a necessary condition to raising more finance.

The assessment was done based on key informant interviews, literature review and validation with stakeholders at the first workshop in October 2023 and the third workshop in April 2024.

TABLE 8 ASSESSMENT OF THE FOUNDATIONAL ELEMENTS REQUIRED TO ATTRACT ADDITIONAL FINANCE AND PRIORITY INTERVENTIONS FOR THE CAMBODIA SANITATION SUB-SECTOR

Foundational Elements Required to Attract Additional Finance	Urban Sanitation	Rural Sanitation
Government Level		
1. Finance strategies and policy	Yellow	Yellow
2. Tariff setting and economic regulation	Yellow	Yellow
3. Regulation and accountability mechanisms	Red	Yellow
4. Clarity of mandate and obligations of service providers	Red	Green
Service Provider Level		
5. Service providers' financial and operational management	Red	Green
6. Business planning and client acquisition	Yellow	Yellow
7. Autonomy and legal framework	Yellow	Green
Suppliers of Finance Level		
8. Commercial/ Public Development Bank risk profile	Yellow	Yellow
9. Market distortions	Green	Green
10. Development funds crowding out private investments	Green	Green

Source: Authors

6.1 Sectoral access to finance

6.1.1 Finance strategies and policy

To be green, the sector needs to have policies and finance strategies that allocate private and public funds to maximize national objectives and targets in the best possible manner, including social commitments.

Assessment

The policy framework for urban wastewater management is evolving, but currently there is no overarching national policy, strategy, action plan or finance strategy. Several key policies are under development, including a policy framework on urban sanitation, a septage management policy and a national sewerage action plan (GGG, 2023).

Phnom Penh is the only city with a faecal sludge management (FSM) strategy. A series of master plans for improving wastewater in various cities are being designed, including Modul Seima District (Koh Kong), Prey Nob District (Sihanoukville); Kampot, Kampong Chhnang and Kep in 2024. These studies will identify priority areas for wastewater treatment systems. The General Department of Sewerage and Wastewater Management in MPWT has been newly established to lead the sub-sector.

Sector policies, strategies and costed action plans are in place for rural sanitation at the national level. While the finance strategy is captured in this document, it's still a long way from its endorsement and implementation.

Opportunities

In the urban sector, there is an opportunity to align the multiple strands of policy work that are currently ongoing with support from various development partners into an overarching policy framework, including a finance strategy that goes beyond infrastructure construction and considers accountability for service levels, management of assets and regular maintenance.

In the rural sector, the current process of developing the third national action plan for rural water supply, sanitation and hygiene (NAP3), and the follow-on action to develop provincial action plans, provides an opportunity to integrate the measures in this finance strategy and operationalize these at the sub-national level by using the sanitation finance operational guidelines.

6.1.2 Tariff setting and economic regulation

To be green, the process and implementation for tariff-setting should be as objective as possible and clearly outlined to provide consistency and ensure that tariffs have some correlation with costs and their possible increase over time. This guarantees the financial viability of service providers and capacity for loan repayments.

Assessment

In urban areas, tariffs for wastewater are collected only in four cities - Phnom Penh, Battambang, Siem Reap and Sihanoukville. In Phnom Penh and Battambang, wastewater charges are collected through the water bills (10 per cent and 7 per cent of the water bill respectively). In Siem Reap and Sihanoukville, wastewater tariffs are collected by the Sewerage and Wastewater Treatment Plant Unit (SWTPU) of the Provincial Department of Public Works and Transport (DPWT).

For pit emptying operators in urban and rural areas, there are no fees set (or ceilings) for emptying services and the price is negotiated between the operator and the customer. There might be affordability issues to consider, but there is not enough information to make this assessment.

For the industrial discharges, national standards on wastewater quality are stated in Annex 2 of Sub-Decree No. 103. The Law on Environmental Protection and Natural Resource Management establishes penalties for breaching national standards. These penalties are considered to be too small to act as a deterrent for the industries to prevent pollution. Revenue from penalties is collected by the MoE, however, the amount collected currently is considered to be quite low. Funds from all fines contained in the Law on Environmental Protection and Natural Resource Management are administered by the MEF.

Opportunities

A wastewater cost recovery framework was prepared in 2021, and a sanitation tariff framework (including a tariff calculation model) was developed in early 2023. The latter enables the sanitation tariff to be determined based on the costs incurred for sanitation service provision in specific municipalities (WB, 2023).

In 2023, the MEF issued an agreement letter permitting water utilities to combine wastewater bills with water bills.

A draft sub-decree on a uniform tariff for water and wastewater services in Cambodia has been drafted and is currently being discussed by MEF, MPWT and MISTI.²⁰

6.1.3 Regulation and accountability mechanisms

To be green on adequate performance regulation, the sector needs well-documented standards and targets for performance, clear lines of accountability, and incentives as well as penalties for performance. This will ensure an investment ready sector.

Assessment

In urban areas, following from the absence of a sector strategy and action plan, there are currently no national targets in place for urban sanitation and the CSDG targets do not include a target related to safely managed urban sanitation. Several cities have prepared master plans, which include sanitation targets. The CSDGs do include a target for wastewater treatment.

Sub-Decree No. 235 sets out the roles and responsibilities of actors regarding wastewater and sets the standards for wastewater from commercial buildings, housing estates, satellite cities etc. There is a mechanism for monitoring wastewater discharge from industries and issuing penalties when standards are breached. For households, there is no monitoring of discharge from on-site sanitation facilities or compliance with building code permits related to septic tanks and there are no requirements for households, businesses or institutions to regularly desludge latrine pits and septic tanks.

There is no regulator for the sanitation sector in Cambodia. The existing policy and institutional framework do not specify who is responsible for the sector in urban areas leading to a lack of clarity on accountabilities on several aspects, including which entity is accountable for registering and issuing business operating licences to service providers.

In the rural sector, national targets for basic and safely managed sanitation have been set as part of the CSDG framework (CSDGs, 2016-2030). The National Action Plan 2 on rural water supply, sanitation and hygiene established priority costed actions to meet these targets and each province has developed its own provincial action plan to meet provincial sanitation targets. Rural sanitation is the responsibility of the district administration and various accountability mechanisms exist at the level of the sub-national administration.

Opportunities

Ongoing work on the evolving policy framework for urban wastewater, including the policy framework on urban sanitation and the national sewerage action plan, offer opportunities to set targets and clarify accountabilities.

The newly approved Water Supply and Sanitation Acceleration Project funded by the World Bank includes a component on institutional strengthening, which aims to define regulatory arrangements (WB, 2023).

Similarly, in the rural sub-sector, the ongoing process to develop the third National Action Plan for rural water supply, sanitation and hygiene (NAP3) will lead to the setting of new targets and priority actions with clear accountabilities.

6.1.4 Clarity of mandate and obligations of service providers

To be green and ensure that rural and urban sanitation service providers serve all their communities and not just the most convenient and/or wealthy parts of their service areas, there need to be clear long-term mandates (included in concession contracts where applicable). This will ensure equity and inclusion in funding and financing.

Assessment

The mandate for urban sanitation remains unclear, especially for non-networked services in urban areas. Currently most investments are focussed on networked services that only serve a small proportion of the populations in towns and cities.

The function for rural sanitation was recently transferred to the district administration with technical support from the Ministry of Rural Development through its provincial departments. In the rural sanitation sector, there are targets in place to reach all households and specific strategies to reach people living in challenging environments. There is also a pro-poor subsidy policy.

Opportunities

Development partners are introducing concepts of city-wide inclusive sanitation and decentralized sanitation with the aim of expanding services to all residents of cities and towns.

The newly approved Water Supply and Sanitation Acceleration Project funded by the World Bank includes a component on institutional strengthening which aims to clarify the institutional roles and responsibilities throughout the sanitation service delivery value chain between the national-level, province-level, and municipality/city-level institutions (WB, 2023).

6.2 Service provider access to finance

6.2.1 Service providers financial and operational management

To be green, service providers need to show that their revenues and tariffs are sufficient to cover the costs of operations. It will also be important to show a track record of asset management. This can be achieved through requiring audited and published financial accounts.

Assessment

In urban areas, financial accounts are not available for the existing wastewater treatment plants and pit emptying operators. Key informant interviews and a document review indicate that revenues are not sufficient to cover the costs of operations for wastewater treatment plants and these costs are subsidized by the government. WWTPs have not demonstrated a track record of asset management.

The two new FSTPs in Siem Reap and Phnom Penh have been operational for less than one year and do not have annual records on income and expenditure. Phnom Penh City Hall currently allows pit emptying operators to dump waste for free, hence the FSTP in Phnom Penh is not generating any revenue.

Pit emptying operators act as informal entities with little distinction between the entrepreneur and the business making it complicated to track profitability. Pit emptying operators reported that the fees collected from customers cover their operating costs. It was noted that competition is increasing as more pit emptying operators enter the market in cities and as a result the fee for services has decreased.

In rural areas, latrine business owners providing household latrines cover their costs of operations through a diversified product offering beyond sanitation (other concrete products such as rings, fence posts etc.).

Opportunities

The Government is currently preparing sanitation tariff reforms for urban areas, with the intention to roll out a sanitation tariff collected by water operators through combined water and sanitation bills in several cities and towns. There is an opportunity to set tariffs at a level that at least covers the cost of operational expenditure.²¹

The new FSTPs in Siem Reap and Phnom Penh were designed to have other small revenue streams from cleaning of pit emptying trucks and selling organic waste products, in addition to dumping fees from pit emptying operators.

MPWT is developing guidelines and training staff on the operations and maintenance of sewerage systems and WWTPs with technical support from development partners. Increasing human resources capacity is seen as crucial as the number of WWTPs is set to increase from three in 2023 to ten in 2025.

6.2.2 Business planning and client acquisition

To be green, the business plan of service providers needs to specify the baseline for performance using key performance indicators and an end line (e.g. where the service provider wants to be in five years), describe the activities that will take it there (either structural or non-structural), and provide corresponding costs and financing mechanisms. To ensure they prepare to meet the CSDG targets, the business plans should also provide details of how they will serve the underserved parts of their service areas and how this will be costed.

Assessment

In urban areas wastewater treatment plant and faecal sludge treatment plant operators do not yet have robust business plans and strategies for client acquisition. Pit emptying operators are functioning as small informal family businesses without business plans.

In rural areas, many latrine business owners have been trained in business planning and some have basic strategies in place to reach new customers, through partnerships with sub-national authorities, NGOs and MFIs.

There are no baselines or studies for unit costs in the urban sector – as a result there is no adequate planning or budgeting, and it is impossible to track performance. For the rural sector, several costing studies have been undertaken and projections and plans are more realistic.

²¹. Details of the proposed tariff reforms, such as tariff rates, have not been made available to the consultants.

Opportunities

Development partners are introducing the concept of supporting service providers to plan for city-wide inclusive sanitation and serve all households with sanitation. For example, in Siem Reap there are plans for city authorities to partner with pit emptying operators to serve households that cannot connect to the sewer network.

In rural areas, development partners are planning technical advisory support to pit emptying operators located in peri-urban areas near existing WWTPs and FSTPs, including business model optimisation, business planning and client acquisition.

6.2.3 Autonomy and legal framework

To be green, service providers need to operate in a semi-autonomous structure that allows for greater flexibility in rewarding staff for good performance and ability to make critical financial and procurement related decisions.

Assessment

The urban wastewater framework in Cambodia is supported by various components comprising Laws (three), Sub-Decrees (seven), Proclamations (one), and Agreement Letters (one), each with its specific focus and scope. Sub-Decree 235 on the Management of Drainage System and Wastewater Treatment System describes the roles of institutions responsible for urban wastewater service provision including municipalities, districts, and Khans. In practice, these sub-national authorities do not yet have the capacities to perform these roles. As a result, in most cities, the wastewater treatment plants are managed by the Sewerage and Wastewater Treatment Plant Unit (SWTPU) of the Provincial Department of Public Works and Transport (DPWT) rather than municipalities, districts, and Khans. As such, these are operating as public utilities.

In Sihanoukville, operation of the wastewater treatment plants has been contracted to the private sector and there are plans to do the same for the new FSTP in Siem Reap.

In rural areas, latrine business owners operate independently as small businesses with full autonomy.

Opportunities

MPWT is developing a comprehensive law on wastewater covering development, construction, operations and maintenance of networked and non-networked wastewater management systems, with technical support from JICA (GGGI, 2023). This law should address some of the gaps and overlaps in the legal and institutional framework described above.

6.3 Suppliers of finance

6.3.1 Commercial bank risk profile

The funding gap requires access to concessional and commercial loans. In terms of finance supply, to be green, lending to the sanitation sector needs to be possible and perceived as medium risk, with investors comfortable with the specific complexity in the sector financial arrangements and long-term payoffs.

Assessment

Currently, there are no commercial banks providing loans to the sanitation sector in Cambodia.

It is instructive to look at the rural Cambodian water market to see how commercial finance for sanitation could evolve. In the water market, formal financial products have yet to emerge that are appropriately structured and sized for the nature of the rural Cambodian water market (Springfield Centre, 2018). Most critically, collateral requirements can be over 200 percent of the loan and there are restrictions on what can be used as collateral. The banks are not willing to lend based on business plans and future cash flows (USAID, 2018). Although many water operators do access commercial financing, the cost of capital constrains their ability and interest to secure enough capital for expansion into less profitable areas (Springfield Centre, 2018).

Opportunities

There are two public development banks in Cambodia. The Agricultural and Rural Development Bank has USD 320 million of total assets (2021) and the SME Bank has USD 280 million of total assets (2022). These public development banks have not yet provided loans for sanitation. Sanitation could be interpreted as being 'within their mandate'²² and finance for sanitation may be available in future as Cambodia's sanitation economy matures and viable investment opportunities emerge.

In the rural water sector in Cambodia, there are successful examples of development partners providing technical assistance to work with commercial banks to reduce the risk of investing in the water sector, through business development support and guarantees, that could be replicated in the sanitation sector, and specifically with public development banks that have access to cheaper capital.²³

6.3.2 Market distortions

Opening local financial markets to the sanitation sector, to be green, means that initiatives should not give rise to market distortions. For instance, the quasi-monopoly in sanitation service provision by state service providers in urban and rural areas can be considered a market distortion in the sense that it prevents private operators from entering the market.

Assessment

Rapid increases in rural sanitation coverage in Cambodia in recent decades are largely due to the creation of a rural sanitation market comprised of numerous small-scale latrine business owners that supply household latrines to rural households. Pit emptying operators function as private businesses and are free to enter the sanitation market in cities and rural areas.

22. It is noted that the SME bank is expanding beyond its original mandate and started lending to private water operators.

23. Foreign Trade Bank (FTB), under a partnership with the French Development Agency, advanced over 25 loans to Private Water Operators (PWO) under a structured finance arrangement involving a credit line, a credit enhancement in the form of a confidential risk-sharing mechanism and a technical assistance package for both FTB and PWOs under a grant from the European Union. Loans accessed from FTB through this partnership were well received by PWOs, indicating that credit enhancements to other financial institutions could unlock additional local private capital for WASH (USAID, 2018).

Opportunities

As Cambodia nears the point where most households have a toilet, the market for toilet upgrades and FSM services (adding alternating pits, upgrading septic tanks, emptying pits/septic tanks) is growing and offers greater opportunities for the local private sector.

Plans to introduce sanitation tariffs in more cities, linked to scheduled desludging services, should generate more opportunities for the local private sector to provide FSM services.

6.3.3 Development funds crowding out private investments

To ensure the maximum impact of available grant and concessional finance in the sanitation sector, it is essential that these funds do not crowd out commercial finance, thereby maintaining a green financing approach.

Development finance therefore needs to be targeted making less commercially appealing projects and service providers credit-worthy and funding the least commercially viable projects. Consideration also needs to be given to finding less costly sanitation solutions for poorer and more remote communities.

Assessment

There is no evidence that development funds are crowding out private investments. Recent projects to build FSTPs in Siem Reap and Phnom Penh used development finance to cover the capital expenditures of construction of the FSTPs. The local private sector is being contracted to manage the operation of the FSTP in Siem Reap. In Siem Reap, development funds are also being used to expand the tertiary sewerage network. The local private sector will be contacted to provide pit emptying services to households that cannot connect to the sewer network as part of a scheduled desludging service.

In rural areas, over the last few decades, development partners set out to facilitate development of a sustainable sanitation market that functions without development funds.

Opportunities

The viability gap financing model and the use of credit enhancements (in the form of a risk-sharing mechanism and technical assistance package) are well established in the piped water supply sector in Cambodia and could be adapted to the sanitation sector.

Ongoing initiatives on City-Wide Inclusive Sanitation supported by various development partners are looking at ways to use development funds to leverage private sector investments.

6.4 Implications for the finance strategy

The assessment shows that there are several major barriers at the government level to increasing finance for urban sanitation. Addressing these barriers is an urgent priority towards increasing finance for sanitation and would have a knock-on effect of removing barriers at the levels of service provider and suppliers of finance.

Fortunately, there are opportunities to address each of the barriers through the ongoing efforts of the government and development partners on policy and tariff reform and institutional strengthening.

The assessment shows that there are no major barriers to increasing investments in rural sanitation from public and development partner finance. At the same time, there are a few bankable projects that would attract commercial finance at this stage, however, this may change as the market for safely managed sanitation products and faecal sludge management services expands.

Part III

Closing the sanitation finance gap

7. Options for closing the sanitation finance gap

This section describes the options available to raise between USD 58 million and USD 123 million per year in sanitation finance in Cambodia. It is important to underline that in the urban sanitation sector, the bottlenecks identified in the previous section will need to be addressed for the finance to be mobilized.

There are mostly three options in a finance strategy:

- To do more with the available funds: increase efficiencies and reduce costs
- To raise more funds from different sources
- To increase repayable finance

Table 9 summarises the options available for Cambodia. For several of these options, a lack of sufficient information prevented a robust estimate of the level of finance that could be raised. Therefore, the total figures underestimate the volume of finance that can be raised with these options. However, the options that have been costed are the most realistic options and the finance that can be generated from the costed options is sufficient to close the funding gap.

TABLE 9 OPTIONS FOR CLOSING THE SANITATION GAP IN CAMBODIA (USD)

Options		Minimum range per year USD	Maximum range per year USD
Increase efficiency of available funds			
1	Subsidy targeting	4,000,000	6,000,000
2	Ringfencing the 10% sanitation fee in Phnom Penh	4,000,000	4,000,000
3	Develop asset management plans for WWTPs	Not estimated	Not estimated
4	Support local authorities with options and costs for adequate budgeting processes and cost reduction	Not estimated	Not estimated
5	Use of decentralized sanitation solutions in cities/ towns	Not estimated	Not estimated
6	Phased approach to FSTP development	Not estimated	Not estimated
7	Create a sanitation budget code to track and monitor sanitation funding flows	Not estimated	Not estimated
Mobilize additional funds			
8	Collecting a sanitation levy in all cities through combined sanitation and piped water bills	27,000,000	55,000,000
9	Increasing the rate of the wastewater/sanitation levy		
10	Reallocation of revenue from existing specific taxes to sanitation and wastewater	20,000,000	40,000,000
11	Climate Finance	1,000,000	10,000,000

Options		Minimum range per year USD	Maximum range per year USD
12	Increase line Ministry budget allocations to sanitation	1,000,000	6,000,000
13	Designate sanitation as an obligatory function of sub-national authorities	400,000	1,000,000
14	Enforce and increase penalties for breaching national standards on wastewater discharge	250,000	500,000
Increase repayable finance			
15	Access repayable finance from public development banks for sanitation	Not estimated	Not estimated
Total		57,650,000	122,500,000

7.1 Options to improve efficiency and reduce the costs of achieving the sanitation targets

7.1.1 Subsidy targeting

Households are not paying for the construction or the maintenance of WWTPs. These costs are fully subsidized by the government. At least the maintenance costs could be paid through tariffs (see options below). With existing maintenance costs of six WWTPs in Phnom Penh, Battambang, Pursat, Stung Saen and Kampot estimated at USD 4 million per year. Between USD 4 million and USD 6 million could be mobilized per year.²⁴

Covering maintenance costs of WWTPs through tariffs has the potential to raise between USD 4 million and USD 6 million in sanitation finance per year.

7.1.2 Ringfencing the 10 per cent sanitation charge in Phnom Penh

The Phnom Penh Water Supply Authority collects a sanitation fee from customers calculated as 10 per cent of the water bill. A proportion of these funds are transferred to the Phnom Penh City Hall.²⁵ Phnom Penh City Hall reports that this revenue is used for installing sewers, emptying and cleaning sewers, repairing sewers, collecting, transporting garbage and cleaning public spaces. Ringfencing the full 10 per cent of fees to be reinvested in asset management and maintenance of WWTPs would raise an additional USD 4 million per year.²⁶

Ringfencing the full 10 per cent of fees to be reinvested in asset management and maintenance of WWTPs would raise an additional USD 4 million per year.

24. MPWT report that the capital costs of these six WWTPs is USD 129 million. Assumption that CapManEx is 30 per cent of CapEx each 10 years. This leads to annual CapManEx of around USD 4 million, excluding the WWTPs in Bavet, Siem Reap, Sihanoukville (where maintenance is expected to be highest due to the Membrane Aerated Biofilm Reactor (MABR) technology).

25. Information on the proportion of the revenue from the sanitation fees that is made available to Phnom Penh City Hall each year, was not made available to the consulting team. The revenue received by PPCA from MEF from the 10 per cent sanitation levy on water bills is reported as USD 5.75 million (2023), USD 3.7 million (2022), USD 3.9 million (2021), USD 1.6 million (2020) and USD 1.85 million (2019).

26. Based on the latest annual report (2022) for the Phnom Penh Water Supply Authority total revenue was USD 86 million. On this basis, the estimated revenue from the sanitation levy is USD 8 million. It is assumed that currently 50 per cent of this revenue is transferred to Phnom Penh City Hall and used for sanitation activities (PPWSA, 2022).

7.1.3 Develop asset management plans for the WWTPs

Investing in additional capital infrastructure (CapEx) without addressing the underlying causes of inadequate maintenance would necessitate costly rehabilitation programmes. This issue has been exemplified by the expensive repairs to sewerage lines in Siem Reap in recent years. Existing sewers and wastewater treatment plants will become dilapidated due to lack of maintenance, resulting in environmental pollution, as most of the sewage ends up in the environment without treatment. A cheap option to reduce future costs involves developing short- to medium-term asset management plans for cities and districts. Preventive maintenance is estimated to reduce capital maintenance costs significantly over time.

7.1.4 Support local authorities with options and costs for adequate budgeting processes and cost reduction

Investing in strengthening institutional capacity of sub-national authorities to prepare plans and budgets and sub-national finance strategies to meet sanitation related targets. Plans should cover costs of operations and maintenance of new infrastructure as well as capital investments. Support these authorities to understand the unit costs of CapEx, OpEx and CapManEx with an emphasis on climate-resilient infrastructure. The Operational Guidelines developed in support of this finance strategy can be used for this purpose.

7.1.5 Use of decentralized sanitation solutions in cities and towns

Make use of decentralized sanitation solutions, such as FSTPs with planted drying bed technology, to service small towns or areas of cities that are not reached by sewerage connected to WWTPs. Around ten new WWTPs are currently under construction in Cambodia's main cities. After this phase of WWTP construction, the focus can shift to FSTPs with lower construction costs, lower operation and maintenance (O&M) costs and potential to contribute to the circular economy.²⁷

7.1.6 Phased approach to FSTP development

The draft national guideline for the planning, design, construction supervision, commissioning, O&M and monitoring of Faecal Sludge Treatment Plants (FSTPs) using Planted Drying Beds (PDB) technology (MPWT, 2023) emphasizes the efficiencies to be gained from taking a phased approach to new investments in FSTPs across Cambodia.

Phasing investment will greatly reduce the risk of overestimating the first investment and will allow for re-assessment of the treatment demand for the second investment. This approach helps to mitigate the risks and optimize the efficiency of investments. Moreover, on a national or regional scale, for the same investment budget, the overall effectiveness of this investment will increase with the rate of FSTP utilization. In other words, for the same amount of money, it is, for instance, better to build two 50 m³/d FSTPs that are 100 per cent utilized than to build one 100 m³/d FSTP, but which is only 75 per cent utilized (MPWT, 2023).²⁸

27. The full list of advantages of FSTPs are listed in the draft National guideline for the planning, design, construction supervision, commissioning, O&M and monitoring of Faecal Sludge Treatment Plants (FSTPs) using Planted Drying Beds (PDB) technology (MPWT) emphasizes the efficiencies to be gained from taking a phased approach to new investments in FSTPs across Cambodia.

28. A common mistake is to apply the rules usually applied to wastewater management also to faecal sludge management without taking into account the specificities of the latter. Given the long track records, experience and availability of accurate models to design sewers and WWTPs, design horizons for wastewater works are often longer than for FSTPs. Given the limited experience with FSTP design in the country and the frequent lack of data to accurately estimate the demand, there is generally a high risk of overdesign for Phase 1. This is particularly true for small cities (i.e. less than 200,000 inhabitants) (MPWT, 2023).

7.1.7 Create a sanitation budget code to track and monitor sanitation funding flows

At present, it is difficult to extract sanitation expenditure from the budget law at national level, from the different ministries and from the sub-national administration budgets. The General Department of Sub-National Administration is currently considering introducing a budget line for sanitation for budgeting during planning and reporting expenditures. This would enable better tracking of sanitation finance in Cambodia at the sub-national level for the first time. This will not directly increase the level of finance available for sanitation. It is recommended to create a specific sanitation budget line code within the MEF system for tracking and monitoring expenditure.

7.2 Options to mobilize additional funding to pay for sanitation targets

This section presents seven options for increasing sanitation finance, starting with the options that have the potential to raise the largest amount of sanitation finance.

7.2.1 Collecting a sanitation levy in all cities through combined sanitation and piped water bills

A wastewater and sanitation levy can be combined with the water bill, and collection of revenue can be undertaken by the water authorities to maximize revenue collection.

An argument, supporting this mechanism, is that the per capita cost of sanitation services can be considered broadly proportional to that of household water use (CWAS, 2020).

In 2023, the MEF issued an agreement letter permitting water authorities to combine wastewater bills with water bills. This paves the way for this reform to be implemented in Cambodia's main cities and towns. This practice has been put in place in Phnom Penh and Battambang, and it can be replicated nationwide. This practice would be a more efficient way to collect payments for wastewater from customers and is likely to lead to higher revenues than fee collection for wastewater services by Sewerage and Wastewater Treatment Units in each city.

7.2.2 Increasing the rate of the wastewater and sanitation levy

There is precedent for a sanitation levy charged as a percentage of the water bill. This levy can be increased and applied in all cities and towns.

The current sanitation levy in Phnom Penh and Battambang is 10 per cent and 7 per cent of the water bill respectively. A draft sub-decree on a uniform tariff for water and wastewater services in Cambodia has been drawn up and is currently being discussed by MEF, MPWT and MISTI.²⁹ The level of the tariff being discussed is not known. Some development partners have advised that the sanitation levy should be 75 per cent of the water bill.³⁰

The potential sanitation finance that could be raised from four major cities in Cambodia is as follows:

- Based on the latest annual report (PPWSA, 2022) for the Phnom Penh Water Supply Authority, the total revenue was USD 86 million. If the sanitation levy was set at 50 per cent this would generate a potential sanitation finance of USD 43 million per year from Phnom Penh alone.
- The 2022 revenue of the Battambang Water Supply Authority is reported to be USD 4.7 million (WB, 2023). If the sanitation levy were set at 50 per cent, this would generate a potential sanitation finance of USD 2.35 million per year from Battambang.

29. The consulting team have not been able to obtain detailed information regarding the proposed sanitation tariff.

30. The current sewerage charge of 10 per cent of the water bill in Phnom Penh is amongst the lowest rate in the Asia region. For example, the sewerage charges as a percentage of the water fee in other cities in the Asia region are as follows - Manila (50 per cent); Jakarta (82 per cent); Dhaka (100 per cent) (ADB, 2004).

- The revenue from the Siem Reap Water Supply Authority and the Sihanoukville Water Supply Authority is unknown. For the purposes of this strategy, the combined revenue from the two authorities is estimated at USD 20 million. If the sanitation levy were set at 50 per cent, this would indicate a potential annual sanitation finance of USD 10 million per year from Siem Reap and Sihanoukville.

Combining wastewater and sanitation with water bills and setting a sanitation levy at 25 to 50 per cent of the water bill in four cities in Cambodia has the potential to generate sanitation finance of USD 27 million to 55 million per year.

7.2.3 Reallocation of revenue from existing specific taxes to sanitation and wastewater

There is potential to generate sanitation finance through reallocation of revenue from existing specific taxes to sanitation and wastewater.

Sanitation taxes are a mechanism whereby tax revenue from a particular source is ringfenced for sanitation activities. Sanitation taxes are used as a finance mechanism in various countries with the tax applied on goods or services, on property, or as an excise tax on import of certain items.

In Cambodia, there are precedents of ringfencing tax revenue for various social sectors. For example:

- A public lighting tax was introduced around 20 years ago to cover the cost of public street lighting in urban areas. This public lighting tax is levied by the General Department of Taxation on entertainment items (such as alcohol, cigarettes) and set at around 5 per cent in 2023. MEF reports that USD 40 million was collected through this tax in 2023.
- The General Department of Customs and Excise collects tax on specific items such as electronic and plastic imported items and this revenue is ringfenced by MEF for solid waste management activities in various cities (not Phnom Penh). MEF reported that USD 43 million was generated through this tax in 2023.
- Property tax is levied on residents in core areas of cities at the rate of 0.1 per cent of the property value. This rate of property tax is low compared to the regional average of 1-3 per cent.

Given the announcements by the Government at the start of its mandate that no new taxes would be introduced, and tax rates would not be increased, in the short term there is greater potential in reallocating a proportion of the revenues from these two existing specific taxes to sanitation, rather than trying to introduce a new tax. For example:

- If the public lighting tax was converted to a 'public lighting and wastewater management' tax and 50 per cent of the revenue allocated for sanitation, this would have the potential to generate USD 20 million in sanitation finance.
- If the scope of the use of the revenue from the tax on electronic and plastic imported items was expanded from 'solid waste management' to 'solid waste and wastewater management', and 50 per cent of the revenue allocated for sanitation, this would have the potential to generate USD 21.5 million in sanitation finance.
- A proportion of the revenue collected on property tax could be allocated to sanitation activities in urban areas.

Reallocating 25 to 50 per cent of the income collected from the existing specific tax for public lighting and the existing tax on the import of electronic and plastic items to sanitation has the potential to generate around USD 20 million to USD 40 million per year in sanitation finance.

7.2.4 Climate finance

According to the climate rationale for WASH in Cambodia, there are opportunities to leverage regional and international climate finance through new and additional financial flows above official development assistance for supporting climate actions (UNICEF, 2023). The most important action is to build the capacities within the sanitation ministries to identify, formulate and develop climate proposals to access international funds.

It is suggested to investigate domestic opportunities for possible sources of climate funds. Move beyond adaptation measures; look at improving climate resilience and decreasing Green House Gas (GHG) emissions as long-term, multi-sectoral programmes. These programmes are innovative because they are cross-sectoral and align with many of Cambodia's Nationally Determined Contributions (NDC).

For sanitation, some of the following areas could be explored:

- Investing more in services for urban populations and specific populations with high climate risk and high prevalence of poverty.
- Investing more in reducing the toxicity of wastewater, as it affects freshwater and marine ecosystems, diminishing their capacity to provide climate resiliency and climate mitigation ecosystem services. Additionally, reducing the toxicity of wastewater impacts the climate resiliency of downstream urban areas. It is also essential to invest in reducing storm overflows, which contribute to these issues and are likely to become more prevalent with the increase in severe storms if not properly managed.
- Investing in technology improvements in faecal sludge treatment plants by:
 - o Reducing and/or capturing methane emissions from anaerobic digesters
 - o Reducing energy and chemical consumption
 - o Reducing sludge production
- Recovering resources:
 - o Wastewater can be treated and reused for multiple purposes (industrial processes, for power plant cooling, to maintain public gardens and parks, to recharge aquifers, among others).
 - o Wastewater can also be sold untreated or partially treated, allowing the final user to treat the water to the desired standard – mostly for irrigation purposes.
 - o Turn sludge into energy: through incineration, biogas recovery, liquid biofuels, carbon capture use and storage.
 - o Recycling and reusing essential nutrients in wastewater can lower the amount of fertilizer farmers must use.
 - o Bio-solids can be used to recover degraded land, as compost or fertilizer in agriculture, and as compost in gardens and golf courses.
- Protecting water sources from pollution and to avoid algal blooms from warmer temperatures by protecting water intake pipes, reducing nutrient load from runoff, or installing barriers can protect coastal aquifers from salinization.

There are various climate funds, which range from a few thousand dollars to more than USD 50 million. In Cambodia, there is the potential to raise USD 1 million to USD 10 million in sanitation finance per year through climate finance.

7.2.5 Increase lead sanitation ministries' budget allocations to sanitation

There is potential to increase the budget allocations to sanitation within the two main line ministries.

Ministry of Rural Development currently allocates 0.9 per cent of the national budget it receives from MEF to sanitation, amounting to approximately USD 1 million. MPWT currently allocates 3.3 per cent of the national budget it receives from MEF to sanitation, amounting to approximately USD 5 million. MRD's planning department is internally making the case for doubling this allocation to sanitation to approximately 2 per cent. Similarly, the allocation to wastewater and sewerage from the MPWT budget may be increased too.

Increasing allocations by ministries to sanitation/wastewater has the potential to generate at least USD 1 million to USD 6 million in sanitation finance per year.

7.2.6 Designate sanitation as an obligatory function of sub-national authorities

There is potential to earmark a specific proportion of the sub-national authority social service budget for sanitation.

The MEF's General Department of Sub-National Administration intends to issue guidance on the use of the social service budget in the coming years. There is strong political support for using part of the social service budget for sanitation. The guidelines could be framed to specify a minimum proportion of the social service budget to be allocated to sanitation. For example, if 25 per cent of the 2024 social service budget was earmarked for sanitation, this would generate USD 1 million in sanitation finance. The sub-national social service budget is designed to increase each year as a proportion of the sub-national budget, and as national revenue grows, this figure would also, consequently, increase.

Designating sanitation as an obligatory function for sub-national authorities and earmarking 10 to 25 per cent of the social service budget for sanitation has the potential to generate sanitation finance of at least USD 400,000 to USD 1 million per year.

7.2.7 Enforce and increase penalties for breaching national standards on wastewater discharge

There is potential to increase the penalties for breaching national wastewater standards in the forthcoming Environmental and Natural Resources Management Code and to use the revenue generated to finance sanitation.

Environmental taxes can reduce environmentally harmful behaviour by increasing the costs of environmental damage. Environmental taxes can raise additional revenues and boost fiscal space, meeting, in part, the need to invest in infrastructure and measures to achieve the SDGs or increase resilience to climate change impacts (UNESCAP, 2017).

Wastewater quality standards are in place and penalties are sometimes applied to industries when standards are breached. National standards on wastewater quality are in place in various sub-decrees (sub-decrees 27, 35, 103, 113). The 'Law on Environmental Protection and Natural Resource Management' establishes penalties for breaching national standards (Articles 20-22), ranging from USD 250 – 7,500 (KHR 1 million to

30 million). This level of fine is considered low and may not act as an effective incentive to avoid breach of wastewater discharge standards. The level of penalties may be increased in a forthcoming Environmental and Natural Resources Management Code.³¹

Revenue from penalties is collected by MoE, however, the amount collected is currently considered to be low.³²

In some case penalties are transferred to the MEF, in other cases revenue is placed in a Social and Environmental Fund managed by the MoE. Information on the average annual revenue generated from these types of penalties was not available to the consulting team. However, it appears that the MoE orientation is geared more towards encouraging violators to improve practices and not towards revenue collection. Another small revenue stream related to wastewater is the solid waste and wastewater discharge permission fee. Every factory needs to apply to MoE for a solid waste and wastewater discharge permission/quota annually, costing about USD 125 (SWITCH-Asia, 2022).

Cambodia's garment sector is large and is the largest source of toxic wastewater discharge. There is potential to generate greater revenue through a penalty mechanism.

The garment industry is one of the largest segments of Cambodia's economy, providing 19 per cent of national GDP and accounting for nearly 72 per cent of the value of total national exports (GGGI, 2018). The garment sector in Cambodia is also the largest source of toxic discharge to water in the country, contributing 69 per cent of all the toxic pollution to water from all sectors (ADB, 2016). Wastewater discharge has increased significantly in the past few years, and polluted water from dyeing and washing factories has become one of the major pollution sources in Cambodia (SWITCH-Asia, 2022).

If penalties for breaching wastewater standards were set at USD 10,000 per breach, and assuming that penalties were applied 100 times per year, this would generate USD 1 million per year. If 50 per cent of the money paid in penalties was allocated to sanitation, this could generate USD 500,000 per year in sanitation finance.

Increasing penalties on wastewater discharge in breach of national standards and allocating 25 to 50 per cent of this revenue to sanitation has the potential to generate USD 250,000 to USD 500,000 in sanitation finance per year.

7.3 Options to increase repayable finance

Since 2022, many of the investments in sanitation have been made through repayable finance, of which most were concessional loans from development banks. The cost of capital, on most of these loans is very low, with an interest rate of around 1.5 per cent per annum.

Sanitation finance from development partners is off-budget and therefore cannot be tracked through the annual budget law documentation from MEF.³³

Sub-national authorities develop action plans, such as provincial action plans and city/town master plans, however, they do not have the ability to access loans to finance these investments.

31. It is understood that inter-ministry discussions are ongoing regarding a wastewater law, and this law will include penalties for wastewater discharges exceeding national standards.

32. Information on the amount collected through penalties by MEF each year was not available to the consulting team.

33. Budget law documents include a column with expected contributions from development partners for each Ministry by project, however, this finance is not confirmed and the consulting team were advised by MEF to not use this data to estimate volumes of available finance.

7.3.1 Accessing repayable finance from public development banks for sanitation

In Cambodia, in the rural water sector, there are successful examples of development partners providing technical assistance to work with commercial banks to reduce the risk of investing in the water sector through business development support and credit guarantees. Development partners and banks could work together to design similar mechanisms in the sanitation sector.

Public Development Banks, such as the SME Bank and the Agricultural Rural Development Bank are expanding their scope³⁴ and have the potential to provide loans, at cheaper rates than commercial banks, to private sector sanitation operators, such as pit emptying business, to expand their businesses.

7.4 Conclusions on the options to reduce the sanitation finance gap

The strategy puts forward ways to close the sanitation finance gap. The sanitation finance gap is estimated at around USD 68 million per year. Fifteen viable options have been identified that, combined, have the potential to raise between USD 58 million and USD 123 million per year.

There are already political support and ongoing efforts to implement several of these options, for example, work on sanitation tariff reform is underway (options #1, #2 and #9); MRD is forecasting doubling of the sanitation budget for next year (option #12) and the MEF is considering making sanitation an obligatory function under the social services budget (options #13). Proposals for climate finance have been submitted to climate funds (option #11).

An implementation plan for this strategy will be developed to phase the roll out of various options. The implementation plan will identify the lead ministry responsible for each action and will distinguish between short- and medium-term priorities. Progress in delivering the implementation plan will be reviewed regularly.

34. For example, the SME Bank is now lending to piped water operators.

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Annex 1: Stakeholders consulted

SI no.	Name	Position	Institution
1	Mr. Sok Monirith	Director of Wastewater	AIMF
2	Ms. Kem Sokuntheary	Deputy Chief of Drainage System, Department of Public Works and Transport	MPWT Battambang
3	Mr. Uth Siramaren	Household	Cambodia Corps, Inc
4	Mr. Touch	Pit emptying operator	Family Business
5	Mr. Mey Rathanathy	Pit emptying operator	Family Business
6	Mr. Rathana	Pit emptying operator	Family Business
7	Mr. Lun Heng	Chief of Office	Wastewater Treatment System Research Department, MPWT
8	Mr. Saoum Bory	Pit emptying operator	Family Business
9	Mr. Chet	Worker	Electrician
10	Mr. Mey Chantha	Pit emptying operator	Family Business
11	Mr. Borin	Pit emptying operator	Family Business
12	Mr. Chem Vibol	Local FSM project Coordinator	AIMS
13	Ms. Khoun Samphors	Marketing the Project Coordinator	Chamroeun
14	Mr. Tit Sophon	WASH Project Officer	LOLC Cambodia Plc.
15	Mr. Im Vibol	Head of the Department of Sewerage, Phnom Penh	MPTW
16	Mr. Sem Chenda	Site Engineer	TS2 in BTB
17	Mr. Seab Bunthorn	Site Engineer	West Battambang wastewater treatment plant and collection system
18	Mr. Kov Phyrum	Senior Water Supply and Sanitation Specialist/Water Global Practice	World Bank
19	Mr. Lo	Electrical worker	Freelancer
20	Mr. Seng Chey Vuth	Director of Provincial Administration	Tbong Khmum Provincial Administration
21	Mr. Soeng Kirivandy	Director of Provincial Planning and Investment office	Tbong Khmum Provincial Administraion
22	Mr. Ky Danarith	Director of Department of Public Works and Transport	MPWT, Tbong Khmum province
23	Mr. Pen Vanna	Director of Administration	Kratie Provincial Administration
24	Mr. Lima Samuth	Director of Investment Planning	Kratie Provincial Administration

SI no.	Name	Position	Institution
25	Mr. Saing Bunthen	Director of Department of Public Works and Transport	MPWT, Kratie province
26	Mr. Lim Minh	Executive Director	Cambodia Water Supply Association
27	Mr. Sim Vey	Chief Engineer	Sunway Hotel, Phnom Penh
28	H.E. Chea Samnang	Deputy Chair of CARD	CARD
29	H.E. Lao Sokharm	Deputy Chair of CARD	CARD
30	H.E. Tuot SamOenh	Advisor to CARD	CARD
31	H.E. Chan Sothea	Under-secretary of State of Ministry of Interior and Deputy Chair of NCDD-S	NCDD-S
32	H.E. Touch Pol Ponnlok	Senior Policy advisor to MOI and NCDD	NCDD
33	H.E. Chheng Mony	Functional Assignment Advisor to NCCD	NCCD
34	Mr. Phoeung Sophath	Deputy Director of Planning and Public Relations	MRD
35	Mr. Phan Chanrith	Director, Department of Sub-national Administration	MEF
36	Mr. Reang Chanphearom	Director of planning and project	Phnom Penh Water Supply Authority
37	Mr. Andrew Shantz	JMP consultant supporting Cambodia on safely managed sanitation	WHO
38	Ms. Suon Chanmeakara	Project Manager	GRET
39	Mr. Tyler Kozole	Program Director	iDE
40	Mr. Meng Opasith	Country Director	ESC-BORDA
41	Dr. Seng Bunrith	Executive Director	B2G Engineering Company Ltd
42	Mr. Ankit Bhatt	Program Lead	GGGI
43	H.E. Huot Hay	Deputy Governor of the Board of Governors Phnom Penh	City Hall
44	Mr. UK Chantharat	Deputy Director General of the General Department of International Cooperation	MPWT
45	Ms. Chhoeun Somonnsanita	Officer, Department of Budgeting of the General Department of Budget	Ministry of Economy and Finance
46	Dr. Mong Lamy, DMII	Chief of Tax Policy Bureau	Department of Law, Tax Policy and International Tax Cooperation

SI no.	Name	Position	Institution
47	Mr. Vorng Say	Deputy Director of Wastewater Management Dept.	Ministry of Environment
48	Dr. Chhau Somethea	Deputy Director General of the General Department of Policy	MEF, General Department of Policies
49	Mr. Sok Oror	Deputy Director of the EIA Department	MoE, Department of Environmental Impact Assessment (EIA)
50	Dr. Chea Eliyan	Senior Consultant	GGGI

Annex 2: Sources of data used in the Cambodia Sanitation Finance Tool

Introduction

The document provides information on data sources and assumptions used in the 'Cambodia Sanitation Finance Tool'.

This document is organized with reference to the 'Data Verification Sheet' and the 'Steps' in this sheet.

Step 1: Country

Country is Cambodia.

Step 2: Base year

Base year is 2024.

Step 3: Country data sources and assumptions

Column F - Households with technological options – Percentage

Data in column F	Source and assumptions
Basic sanitation (onsite only)/Urban – Septic tank 100%, Pit latrine 0%	JMP 2023 Cambodia Profile.
Basic sanitation (onsite only)/Rural – Pit latrine - regular context 73%, Pit latrine – challenging context 27%	Data on number of people living in challenging environments from MRD, 2019, National guiding principles on sanitation in challenging environment for rural households.
Safely managed sanitation/Urban – Sewerage with treatment 47%, Septic tank with treatment 53%	JMP 2023 Cambodia Profile. Based on 'Safely managed sanitation calculation' in tab/excel sheet 'Charts SM'. Profile shows 24% 'disposed in situ' and 21% 'wastewater treated'. These data are used to estimate proportion of safely managed served by sewerage with treatment (47%) and by septic tank with treatment (FSM) (53%).
Safely managed sanitation/ Rural – Pit latrine with pit emptying 12%, pit latrine with twin/alternating pit (stored and disposed in situ) 88%	Based on CDHS 2021-22 : 88% of septic tanks and latrines 'not emptied/ stored and disposed in situ'.

Column G - Service coverage level baseline year

All data taken from [JMP 2023 Cambodia Profile.](#)

Column H – Coverage target 2030

Cambodia SDG targets have been considered. As advised by MPWT during the second workshop in January 2024, the urban safely managed sanitation target is set at 50 per cent.

Column I – Capital costs (CapEx)

Data in Column I	Source and assumptions
Basic sanitation (onsite only)/ Urban – Septic tank – USD 243.9	Kills found unit cost to range from USD 500 – 1,500. Midpoint of USD 1,000 is used for calculations. This is divided by average household size of 4.1 people to derive per capita unit cost.
Basic sanitation (onsite only)/ Rural – Pit latrine - Regular context - USD 82	<p>Based on WaterSHED, 2019, Estimating the economic benefits of market-based sanitation programs, Table 10 (p. 20) – Market Price Weighted Average of single pit latrine found to be USD 289. This unit cost has been adjusted for inflation at 3% per year, resulting in unit cost of USD 336 per latrine. This is divided by average household size of 4.1 people to derive per capita unit cost. (WaterSHED, 2019)</p> <p>This unit cost is triangulated by average household latrine cost of USD 341 found in the (iDE, 2023), Sanitation market assessment in Cambodia’s north-eastern provinces.</p> <p>This is further triangulated by the data on the average cost of household latrines, constructed under iDEs sanitation program between 2014 and 2017, as reported in (iDE, n.d.), ‘Cambodia market based sanitation scale up 2.0, SMSU 2.0 final evaluation report.’ The average unit cost was USD 241. When inflation of 3% is factored in, this brings the latrine cost to USD 324 in 2024.</p> <p>To be noted: These unit costs taken from various documents and reports and plans are lower than unit costs obtained in KIs by the consulting team in this assignment and at the second workshop (validation workshop), where the participants advised to consider USD 700 per latrine.</p>
Basic sanitation (onsite only)/ Rural – Pit latrine – Challenging environment - USD 100	<p>Based on information from KIs with implementing partners in 2023/24. Lower end of range used to align with row above.</p> <p>Note that at the second workshop (validation workshop) participants advised to use USD 900 per latrine.</p>
Any fixed point defecation/ Rural – Any latrine, including unimproved – USD 20	Assumption that per capita unit cost is USD 20 for unimproved pit latrine with low-cost superstructure.
Safely managed sanitation/ Urban – Sewerage with treatment – USD 1,413	Based on data provided by MPWT in March 2024 on Capital Costs and population served for five WWTPs in Battambang (2), Pursat, Stung Saen and Kampot.
Safely managed sanitation/ Urban – Septic tank with treatment – USD 256	<p>For septic tank component - KIs with households found unit cost to range from USD 500 – 1,500. Midpoint of USD 1,000 used for calculation. This is divided by average household size of 4.1 people to derive per capita unit cost of USD 244</p> <p>For FSM component - (Phnom Penh City, 2023), Faecal sludge management strategy 2035 for Phnom Penh capital shows CapEx for four FSTPs estimated at USD 20 million to serve 66% of city population in 2035 (1.6m people), equating to per capita CapEx cost for FSTP of USD 12.5.</p>
Safely managed sanitation/ Rural – Pit latrine with pit emptying – USD 82	See information in row 2 above on ‘Basic sanitation (onsite only)/ Rural – Pit latrine - regular context’ for pit latrine unit cost estimates.
Safely managed sanitation/ Rural – Pit latrine with alternating pit – USD 94	<p>See information in row 2 above on ‘Basic sanitation (onsite only)/ Rural – Pit latrine - regular context’ for pit latrine unit cost estimates.</p> <p>Cost of alternating pit construction, provided by iDE in KI in October 2023, as USD 50. This is divided by average household size of 4.1 people to derive per capita unit cost of USD 12.</p>

Column J – Capital costs – CapEx software

Software costs are assumed to be 10 per cent of CapEx costs. This is the assumption used in the [SWA/UNICEF SDG costing tool](#).

The software cost of USD 8 for basic sanitation/ rural/ pit latrine triangulates with the unit costs for software in CLTS projects of USD 7 (as provided by UNICEF in 2024).

Column K – Capital costs - Duration

Duration (life) of capital assets is taken from [SWA/UNICEF SDG costing tool](#) (SWA/UNICEF, 2020), which assumes worldwide average parameters.

Columns L&M – Capital costs - Cost recovery

Assumption that all capital costs are paid by households and all software costs are not paid by households (which are covered by subsidy from the government, development partners etc.). This equates to a 10 per cent subsidy. This applies to all services, except safely managed sanitation/urban areas.

The assumption is different in the case of safely managed sanitation/urban areas.

- Urban sewerage connection costs are USD 350 per household connection, or USD 85 per capita (as reported by MPWT at the second workshop – validation workshop). This equates to 6 per cent of the CapEx unit cost and therefore, the subsidy is 94 per cent.
- For septic tanks with treatment, the cost of the septic tank is paid by the household – which is estimated at USD 244 per capita. The cost of FSM is not covered by households – estimated at USD 12.5 per capita. This equates to 6 per cent of the CapEx unit cost and therefore, the subsidy is 6 per cent of the CapEx cost.
- Given that the split between sewerage and septic tank is around 50/50 – see column F – it is assumed that the subsidy is 50 per cent for safely managed sanitation in urban areas.

Column N – Maintenance costs (CapManEx) – Asset management

CapManEx assumed at 30 per cent of CapEx based on [SWA/UNICEF SDG costing tool](#).

Except for basic sanitation/rural/pit latrine in challenging environments, where CapManEx is assumed to be 50 per cent to meet the higher costs of maintenance due to climate risks (UNICEF, 2023).

Column O – Maintenance costs - Duration

Duration for maintenance expenditures is set at half the life of capital infrastructure (Column K) according to the [SWA/UNICEF SDG costing tool](#) (SWA/UNICEF, 2020).

Columns P&Q – Maintenance costs - Cost recovery

It has been assumed that all maintenance expenditures are paid by households for all services, except for safely managed sanitation in urban areas. For safely managed sanitation in urban areas, it has been assumed that households cover all maintenance costs for septic tanks and zero maintenance costs for WWTPs. On this basis, subsidy is estimated at 50 per cent for safely managed sanitation in urban areas.

Column R – Operating costs (OpEx)

Data in Column R	Source and assumptions
Basic sanitation	Unit costs derived from key informant interviews with implementing organizations and a small number of households and validated by stakeholders at the second workshop (validation workshop).
Safely managed sanitation/ urban/ sewerage with treatment	<p>It has been assumed that costs of maintaining latrine are same as for basic sanitation.</p> <p>Unit costs for operation of WWTP are estimated at USD 2.84 per capita per year.</p> <p>Based on KII with WWTP operator in Battambang – estimated OpEx at USD 100,000 per year; number of people served by two WWTP in Battambang is 35,000 people, equating to per capita unit cost of USD 2.84.</p>
Safely managed sanitation/ urban/ septic tank with FSM	<p>It has been assumed that costs of maintaining latrine are same as for basic sanitation.</p> <p>Operation of FSTP estimated at USD 1 per person.</p> <p>Based on KII with FSTP operator in Siem Reap – estimated OpEx of USD 4,000 per month of USD 48,000 per year. It has been assumed that each FSTP is designed to serve 48,000 people.</p>

Columns S&T – Operating costs - Cost recovery

It is assumed that all maintenance expenditures is paid by households, for all services except for safely managed sanitation in urban areas.

For safely managed sanitation in urban areas, it is assumed that households cover all maintenance costs for septic tanks and zero maintenance costs for WWTPs. On this basis, the subsidy is estimated at 50 per cent.

Other assumptions

The size of household is estimated at 4.1 people per household, as per [Cambodia DHS 2021-22](#) (NIS, MoH, ICF, 2023).

Step 4: WASH expenditures

This is the section where most assumptions are made given the lack of available data.

Column E – National budget

Urban – The budget allocated by MEF to MPWT is 3.3 percent. This figure has been confirmed by MPWT during the meeting on 3 May 2024.

Rural – The budget allocated by MEF to MRD is 0.9 per cent. This figure has been confirmed by MRD at the second workshop.

Column F – Sub-national budget

Consulting team's calculations based on the information provided by MEF, General Department of Sub-National Administration. See Annex 3 for description of the methodology. In the calculations, the minimum range has been used. Available finance from sub-national budgets is split equally between rural and urban.

Columns G&H – ODA

Consulting team's calculations based on analysis of OECD DAC ODA database and CDC database for data from 2016 to 2023. All grants for sanitation are assumed to be for rural sanitation. Loans for sanitation are assumed to be 90 per cent for urban and 10 per cent for rural.

Annex 3: Method used to estimate sub-national allocations to sanitation

Commune and district level budget			Min range	Max range
		Riel	USD	
1	Total budget is 3.6% of total revenue - equivalent in 2024 to	43,750,000,000	10,937,500	
2	Percentage of commune budget allocated to social services increases each year			
	2024	13%	1,421,875	
	2025	18%	1,968,750	
	2026	22%	2,406,250	
	2027	26%	2,843,750	
	2028	31%	3,390,625	
	2029	31%	3,390,625	
	2030	31%	3,390,625	
3	Assume that allocation of social service budget to sanitation is 5% or 10%			
	2024		71,094	142,188
	2025		98,438	196,875
	2026		120,313	240,625
	2027		142,188	284,375
	2028		169,531	339,063
	2029		169,531	339,063
	2030		169,531	339,063
4	Total allocation to sanitation from social service budget 2024-2030		940,625	1,881,250
Municipal, district, khan budget				
5	Total budget is 1.5% of total revenue - equivalent in 2024 to	20,000,000,000	5,000,000	
6	Allocation to social service not yet defined. Assume that this is 25%			
	2024	25%	1,250,000	
	2025	25%	1,250,000	
	2026	25%	1,250,000	
	2027	25%	1,250,000	
	2028	25%	1,250,000	
	2029	25%	1,250,000	
	2030	25%	1,250,000	
7	Assume that 5% - 10% of social service budget is allocated to sanitation			
	2024		62,500	125,000
	2025		62,500	125,000
	2026		62,500	125,000
	2027		62,500	125,000
	2028		62,500	125,000
	2029		62,500	125,000
	2030		62,500	125,000
8	Total allocation to sanitation from social service budget 2024-2030		437,500	750,000
9	Total sanitation budget from lowest two levels of sub national government 2024-2030		1,378,125	2,631,250
10	Total sanitation budget from lowest two levels of sub national government per year		196,875	375,893

Annex 4: Cambodia sanitation finance tool (Excel file)

Annex 5: Easy to use guidance to apply the SDG costing tool

Available here - https://www.sanitationandwaterforall.org/sites/default/files/2020-09/WASH_SDG_Costing_Tool_En2020.pdf

Annex 6: Operational guidelines (in Khmer)

