REPORT

ASSESSMENT OF WASH FUNDING AND FINANCING IN VIET NAM

November 2022

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Acronyms

MARD	Ministry of Agriculture and Rural Development
MoC	Ministry of Construction
MoET	Ministry of Education and Training
MoF	Ministry of Finance
MoH	Ministry of Health
MoNRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
NTP	National Target Program
NCERWASS	National Centre on Rural Water Supply and Environment Sanitation
VDB	Viet Nam Development Bank
VBSP	Viet Nam Bank for Social Policies
NRW	Non-Revenue Water
WASH	Water Sanitation and Hygiene
ODA	Official Development Assistance
O&M	Operation and Maintenance
PCERWASS	Provincial Centre on Rural Water Supply and Environment Sanitation
PPP	Public-Private Partnership
SDG 6	Sustainable Development Goal 6
GSO	General Statistic Office
MFI	Microfinance institutions
PPC	Provincial People's Committee
UNICEF	United Nations International Children's Emergency Fund
VWSA	Vietnamese Water and Sanitation Association
WWT	Wastewater Treatment

Exchange rate as of July 29, 2022: US$ 1 = VND23,176

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EXECUTIVE SUMMARY

A report on the state of urban and rural water supply, wastewater collection and treatment in both urban and rural areas, water supply and sanitation in schools and health centres, and water, sanitation and hygiene (WASH) funding and financing in Viet Nam

The main objective of this report is to formulate recommendations to the Government of Viet Nam and development partners on a funding and financing strategy for WASH going forward. The Government of Viet Nam has set objectives for the WASH sector for 2030 and beyond, but, to date, there is no clear funding and financing strategy for achieving these objectives. This report provides a basis for formulating such a strategy by answering the following questions:

1. What are the funding requirements for meeting government objectives?
2. What is the current status of WASH funding and financing?
    - Who is funding and financing WASH services?
    - How much is going into WASH?
    - What is being funded, i.e., what services?
    - What funding and financing instruments are being used?
3. What funding and financing instruments can and should be promoted?
4. What other actions should be taken to accelerate results?

This report, which aims to provide a national assessment of WASH funding and financing, is faced

with limitations. A nationwide assessment would require an analysis of WASH funding and financing data for all 63 provinces, which is beyond the timeframe and resources allocated to this study. As a result, the study mostly provides a qualitative assessment of WASH funding and financing at the national level, analysing related regulations and assessing the extent of public and private funds going into WASH, based on literature review and interviews with key informants.

In order to address these limitations, a quantitative analysis of the situation is provided for two selected provinces with contrasting socio-economic conditions: Dien Bien and Soc Trang. Dien Bien is a mountainous province of the Northwest with a relatively high poverty rate and difficult topographical conditions. Soc Trang (in the Mekong Delta) has comparatively well-developed economic conditions, but is affected by climate-induced natural disasters such as drought and saltwater intrusion.

The Government of Viet Nam's vision for WASH services is to achieve access to clean (piped) water for all urban residents and 80 per cent of the rural population by 2030, while stepping up wastewater treatment

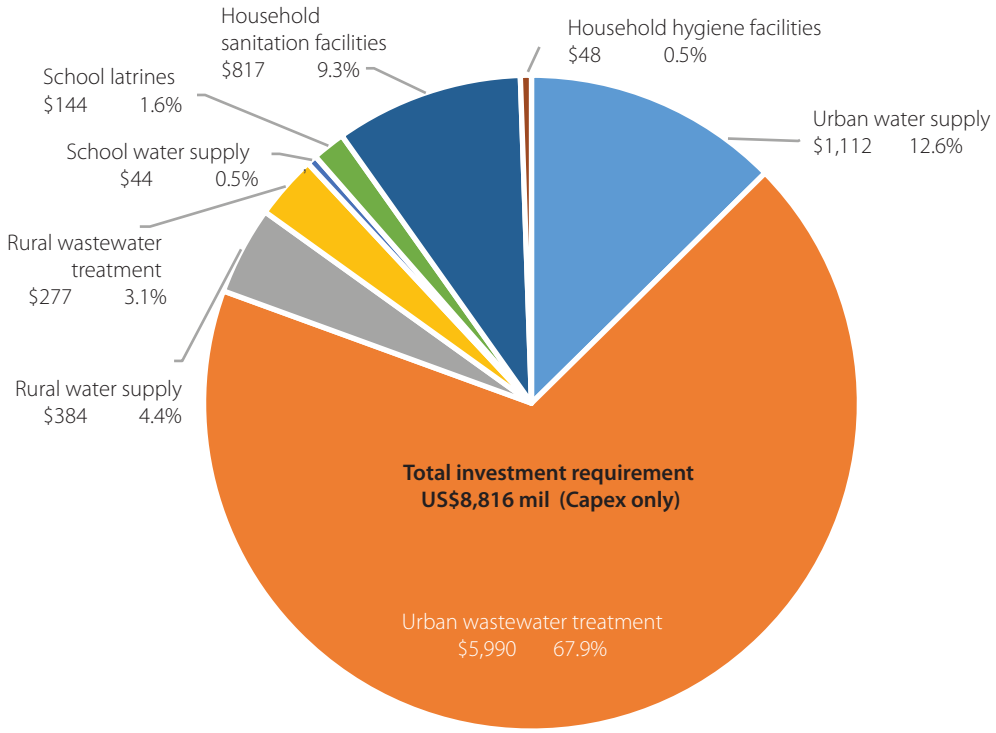
The Government's vision for water services is one that aspires to clean water for all urban populations by 2030, with at least 80 per cent of rural populations also benefiting from piped water services. Implementing this vision will require one or more of three tactics: investments in new water treatment facilities and associated distribution systems, promoting self-supply in challenging contexts, or upgrading water systems capacity from hygienic systems to ones that can deliver clean water. In total, an estimated 28 million people will need to benefit from water systems upgrades and over 14.8 million will require additional water production and distribution capacity by 2030.

Government objectives are also to ensure access to household sanitation for all and a minimum level of treatment of 20 per cent and 15 per cent of wastewater in urban and rural areas, respectively. In total, by 2030, an additional treatment capacity of 2.4 million m^3/day of wastewater would be required to achieve these objectives, with over 2 million m^3/day per day required in urban areas alone. In addition, the target is for 100 per cent of the population to be practicing personal hygiene (including hand washing). Finally, the Government has made it an objective to ensure that 100 per cent of schools and healthcare facilities have hygienic latrines meeting government standards, and access to clean water supplies.

Achieving this vision: a minimum financial requirement of VND204.3 thousand billion ($8.8 billion) for capital expenditure (Capex) alone

The total estimated capital investment requirement for meeting government objectives is VND204.3 thousand billion ($8.8 billion), equivalent to 3 per cent of Viet Nam's 2020 GDP. An estimated 68 per cent of capital requirements are to cover the costs of urban wastewater treatment (and sewerage). Urban water supply represents the next largest investment (12.6 per cent), followed by rural water and wastewater (3 per cent) (Figure E1).

Figure E1: Capital investment requirements for meeting government objectives by 2030 in US$ million and percentage share for each sub-sector



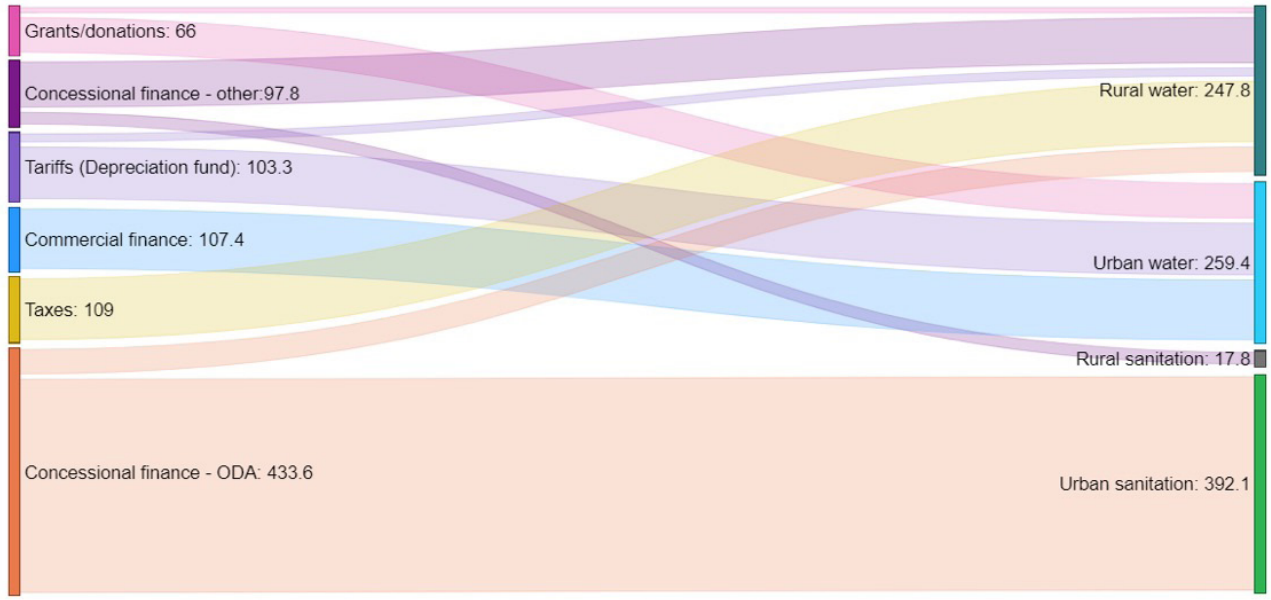
Source: Consultants' estimates based on government standards and unit costs and SDG costing (for hygiene)

Current trends in WASH sector funding and financing

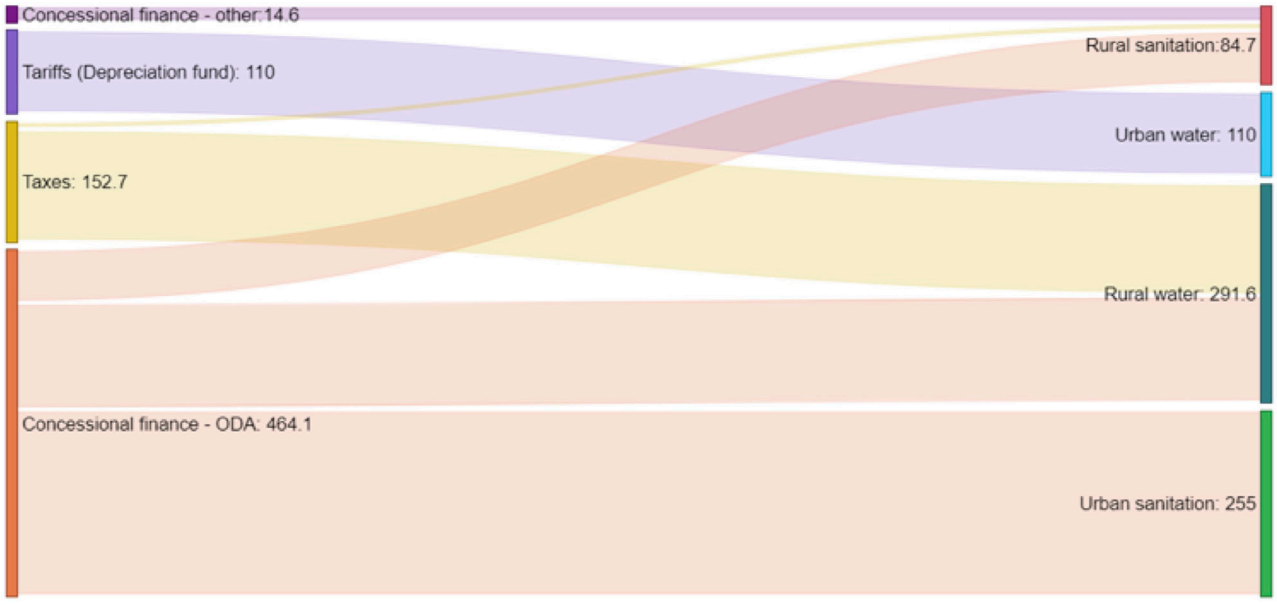
National trends in WASH sector funding and financing are confirmed by the situation in Soc Trang and Dien Bien (Figure E2). The overall trend is that Viet Nam provinces do present different situations related to WASH funding and financing, determined by their socio-economic background and geographical conditions. A major difference is the capacity to draw on tariffs (depreciation funds) to fund water supply investments. A common trend between provinces is noticeable and a significant proportion of finance is going into wastewater management (sewers and associated treatment services). Key findings are further detailed below.

Figure E2: Sources of funds and finance for WASH in Soc Trang and Dien Bien (2016-2020) in VND billion

Soc Trang



Dien Bien



Source: Authors' analysis is based on data from provinces

1. Urban water is increasingly funded via tariffs (depreciation funds) and commercial finance, which is a positive indication of financial sustainability.

At national level, public funding for urban water supplies is very limited, not surpassing 6 per cent of total WASH-related investments in 16 sample provinces. Investments in urban water are mostly realized using depreciation funds from tariff revenues as well as commercial finance, equity in particular. This trend is confirmed by data from Dien Bien and Soc Trang.

However, going forward, investments in urban water supplies are required: (i) to mobilize water resources (e.g., construction of dams and reservoirs) in order to maintain current service levels in the face of decreasing water resources; and (ii) to extend piped water to those who are excluded from services (since over 15 per cent of the urban population do not have access to piped water supplies). **The challenge for the Government of Viet Nam is to provide incentives to Water Supply Companies (WSCs), which in turn are responsible for making investments required to extend water services to this excluded population and improve services up to government standards.**

2. The bulk of Official Development Assistance (ODA) is allocated to wastewater services development.

Nationally, there has been a significant decrease of ODA funding allocated to water services (both urban and rural), with an increase of ODA allocation to wastewater services. This trend is reflected in Soc Trang, where investments in wastewater using ODA represent the largest allocation to WASH between 2016 and 2020. However, current investment levels are not sufficient to meet government objectives related to wastewater, either in Soc Trang or Dien Bien. Although current levels of investments in wastewater in Dien Bien, if maintained, could help meet government objectives in urban areas, investments are totally lacking in rural wastewater. In Soc Trang, the investment shortfall concerns both urban and rural wastewater. Given that wastewater investments are mostly reliant on ODA projects, there is a lack of predictable funding available for wastewater in the future. **Securing investments in wastewater requires unlocking additional finance, including from locally generated funding sources**. Existing funding should be spent in the most effective manner (see recommendations).

3. Investments in rural water services have been dependent (mostly) on ODA in many provinces; however, this situation is evolving without clear commitments from national and local governments to continue to supply financial requirements.

ODA projects for rural water (and sanitation) are winding down, even though access to piped water in rural areas is only 34.8 per cent. At the same time, allocation from the new rural Nationally Targeted Programme (NTP) barely, if at all, surpasses 1 per cent of the total NTP budget. The **Government of Viet Nam should therefore take measures to incentivize allocations to the rural water sub-sector from taxes (government funding) and/or make available alternative forms of concessional (non-ODA) finance** to meet the minimum of VND15 thousand billion (US$661.7 million) required to achieve government objectives on rural water supply and sanitation.

4. Alternative concessional finance is emerging and is being used for rural water investments.

There is evidence that some rural water service providers, including PCERWASS, have the capacity to access concessional repayable finance. This is the case where rural water operators have good technical and financial performance. In Soc Trang, the PCERWASS is able to benefit from a loan from the PPC (Provincial People's Committee) and to match donations/grants via the depreciation fund. Other rural water utilities could benefit from these types of instruments if they meet operational and financial requirements. **A key area of intervention for the Government of Viet Nam is to build the technical capacity of rural water service providers towards greater access to alternative funding sources.** This would imply, for example, the development of technical assistance projects and programmes that can help rural water service providers deliver services at optimum costs and maximize revenue potential from the sales of water.

5. Some provinces are not ready for commercial finance (private investments) in any sub-sector.

Although detailed national data on the financial performance of urban and rural water service providers is not available, the case study of Dien Bien shows that repayable finance (even on concessional terms) is accessible for all water service providers. Dien Bien illustrates a case where both urban and rural water service providers are not yet ready for repayable finance. Most such water service providers are concentrated in the Northern mountainous region of the country, in provinces such as Lai Chau, Ha Giang and Cao Bang, where water services expansion and sustainability are challenged by poverty rates, entrenched behaviours (that limit willingness to pay) and low population density. In these contexts, **government action is required in the medium- to long-term to engage with populations on the benefits of piped water (as opposed to alternative sources) and for covering operational costs, where necessary, to protect investments**.

6. Central government is mobilizing funds and implementing projects related to WASH in schools and healthcare facilities, with limited involvement from PPCs.

The central Government mobilizes funding for WASH in schools and healthcare with support from development partners (World Bank and ADB, among others) in which central government agencies are project implementers. This approach is effective in accelerating the pace of WASH services coverage in these institutions. However, there is room for greater involvement of PPCs to ensure greater ownership at local level of WASH in schools and healthcare facilities, which can help ensure better prioritization (based on knowledge of critical gaps in provinces) and greater ownership of operation, maintenance and renewal of WASH infrastructure. Socialization for WASH, including calling support from private sector, community, parents, etc. is also another important channel to increase funding for WASH in schools and health stations that MoET has initiated successfully through the 'Wish for You' programme since 2021. This programme aims to introduce, spread and call for resources to support educational development in disadvantaged areas, remote areas and ethnic minority areas, including building/upgrading WASH facilities in schools.

7. There are large unmet investment needs for rural sanitation.

Although the picture is not complete due to lack of national and provincial data on household investments, current access figures indicate that many households are reluctant to invest in or unable to afford hygienic latrines. For example, based on figures from the Vietnam Bank for Social Policies (VBSP), current annual household investment in rural sanitation hygienic facilities in Dien Bien is VND16.9 billion. However, considering the access gap in Dien Bien (over 50 per cent of the population lack access to hygienic facilities), the annual investment requirement amounts to VND187 billion (US$8.1 million) or more than 10 times the current investment levels. **The Government needs to set up mechanisms to incentivize and support households' investments in hygienic sanitation facilities.** The Government should also build on the experience and results of the World Bank-funded rural water and sanitation programme to continue to develop sanitation markets and make available affordable sanitation for households to purchase.

Recommendations to inform a future funding and financing strategy

Based on the above assessment, the following recommendations are formulated to increase the availability of funds for the WASH sector and to make use of existing funds more effectively:

1. Investigate effective channels for facilitating access to alternative repayable concessional finance.

Alternative concessional repayable finance refers to non-traditional ODA finance and alternatives to purely commercial finance (provided by commercial banks or private investors looking for commercial-like returns). In Viet Nam, the VBSP and the Vietnam Development Bank (VDB) present two existing models and channels of alternative concessional finance. In these models, government funding is used to provide lending capital which can then be deployed at more affordable lending rates or towards priority sectors, in line with government policy. Going forward, **both these models should be assessed to establish whether they can provide the financing required to meet government objectives for WASH**.

In addition to these two existing structures, the Government should investigate **the setting-up of a dedicated, independently managed, blended finance facility**: **a 'Water Fund'.** Such a Fund would attract funding from investors with different risk appetites and enable access to affordable finance for water and sanitation enterprises.

Action point: Commission a detailed feasibility study on alternative repayable concessional finance with attention to three channels in particular: VDB, VBSP and a dedicated blended finance facility (the Water Fund). This assessment will establish the pros and cons of each channel and support decision-making on the way forward to enable access to concessional repayable finance.

2. Mobilize funding for the water sector from the sector itself: introduce regulations and mechanisms to ensure all proceeds from water abstraction fees and polluter-payer fees are used exclusively for water sector investments.

All fees from the water sector should be retained for investments in the sector, including for water supply and wastewater, in line with a basic principle of Integrated Water Resources Management (IWRM). Other countries have set up dedicated river basin agencies that collect these fees, which are then used to channel grants or concessional finance to water service providers. Similar power can lie within PPCs or any other designated government agencies.

Action point: Ministry of Agriculture and Rural Development (MARD), Ministry of Construction (MoC) and Ministry of Natural Resources and Environment (MoNRE) to commission a study on the optimum institutional and organizational set-up to collect and channel revenues for abstraction charges and polluter-payer fees. Such a study will consider institutional options to be developed at national level, provincial level and inter-provincial level.

3. Incentivize PPCs to fully implement tariff policies

WSCs should implement the tariff structure as indicated in Circular 44/2021/BTC, channel subsidies where required (as per the same circular) and implement the Prime Minister Decree 80/2014/ND-CP on wastewater tariffs.

Action point: MARD and MoC to support provinces to prepare tariff roadmaps that are progressive and include subsidies, if required, but progressively phase out the subsidy on water and wastewater tariffs from now until 2030 to submit to the Prime Minister for approval and implementation.

4. Improve private sector participation (PSP) conditions

Public-private partnerships (PPPs) for water and wastewater are still very limited, while equitization is not in place in all provinces, especially in rural areas. One essential condition to improve is access to investment capital. In line with Recommendation 1, the Government should play an active role in facilitating access to affordable finance, including for the private sector. Another important condition is cost recovery: some areas are not of interest to the private sector because cost recovery is a challenge (due to low tariffs and low consumption) and there are limited opportunities to make interesting returns on investments. Attracting the private sector to these areas would require PPCs to supplement revenues from tariffs with subsidies (government transfers) from their budgets if tariffs cannot be increased due to socio-economic conditions, as they do with wastewater services in urban areas.

Action point: Work on identifying sources of finance for the private sector (including via a possible water fund or any other suitable vehicle) while continuing to support PPCs in entering into PPP agreements for water investments. MoC and MARD to issue a circular on procedure for engaging private sector in PPP contracts in the WASH sector with template contract documents, including performance indicators as part of contracts.

5. Improve investment efficiencies in wastewater.

Inadequate wastewater treatment facilities throughout the country justify government budget allocation to the sub-sector for class II and upper-class cities; however, investments carried out can be further optimized. In order to improve the effectiveness of wastewater projects, PPCs should carry out strategic planning for sanitation and wastewater to determine the most appropriate response for improving wastewater management through: effective application of technology (particularly centralized/decentralized systems), building demand for household connections, and optimizing overall systems design (to match wastewater quality).

Action point: MoC to develop and issue a circular that will guide provinces in planning and implementing investment projects in wastewater for more efficient design.

6. Introduce more incentives for WSCs' investments in water supply to poor areas and for meeting government standards.

The Government should implement strategies to incentivize WSCs' investments in areas that can help meet government objectives and standards. In order to identify these strategies, it is recommended, first, that government agencies organize a national forum on water supply finance with a focus on urban areas and how to reach the last 15 per cent who are not connected to WSCs' systems. As part of potential financial incentives, the Government can propose, for example, the provision of guarantees to attract private investors into PPP schemes. In addition to financial support and mechanisms, the Government should look into regulatory incentives (e.g., introduction of performance targets related to coverage) to incentivize investments in less profitable areas.

Action point: MoC to organize national consultations on the state of urban water supplies, funding requirements and approaches to facilitate and incentivize investments. The outcome of these consultations will be a joint roadmap between the Government and WSCs with key responsibilities of each actor, including PPCs, detailed.

7. Develop a well-targeted central government programme for sanitation and rural water supply in difficult areas.

In certain provinces, commercial or alternative concessional (non-ODA) finance is not appropriate as a source of funds. In these provinces, water and sanitation services still require central government funding. In addition, financial resources are required for behaviour change and communications activities, which are 'soft' investments that no longer qualify for ODA finance. In this context, it is recommended that a dedicated government programme is launched with the specific purpose of developing WASH services in geographically difficult provinces.

Action point:

1. **NCERWASS to accelerate the implementation of two investment projects (i) for three northern mountain provinces (Cao Bang, Ha Giang and Lai Chau) and (ii) for seven provinces of Mekong Delta (Dong Thap, Ben Tre, Tra Vinh, Soc Trang, Bac Lieu, Ca Mau and Kien Giang).**

2. **MARD to continue to obtain approval and to initiate the implementation of the water and dam security and reservoir safety project, period 2021-2030, vision to 2045.**

8. Continue to mobilize funding for WASH in schools and healthcare facilities, including from local provincial funding.

The central Government should continue and accelerate public funding mobilization for WASH in schools and in healthcare facilities, including in the context of projects supported by development partners. At the same time, the central Government should allow increased ownership by PPCs of WASH in schools and health, which means supporting PPCs to become 'project owners' to ensure stronger involvement in funding the infrastructure and in its maintenance and renewal (where necessary).

Action point: Ministry of Education and Training (MoET) and Ministry of Health (MoH) to continue to identify funding opportunities to accelerate coverage and to design projects allowing greater ownership of PPCs of school and health care facilities.

9. Scale up VBSP operations for scattered populated households.

Lending capital for VBSP's activities in water and sanitation should be increased. Demand for water and sanitation loan products is very high, with well-performing portfolios. Given the extent of investment needs in sanitation and rural water (especially for household treatment), VBSP's involvement should be scaled up. However, for VBSP's products to be inclusive, there should be consideration for adopting a more affordable interest rate. It is also recommended that VBSP's operations are supported by government-funded behaviour change and communications campaigns.

Action point: MARD to engage with VBSP to develop a lending programme for the implementation of National Strategy in RWSS 2030 and vision 2045. As part of this lending programme, specific provinces will be targeted for DWR to engage with the DARD and Department of Health (DoH) and mass organizations of these provinces on the programme and their roles in facilitating the uptake of water and sanitation lending products among households.

10. Prepare WASH sector for climate finance.

Viet Nam's Nationally Determined Contributions (NDC) to the Paris Agreement recognize water resources as the number one impact of climate change on the country. In provinces visited by the research team, (Dien Bien and Soc Trang), these impacts are being felt. As recognized in the NDCs, it is the poor, and populations from ethnic minorities and mountainous areas who are the most vulnerable because of their limited capacity to cope. This context of WASH services provides a strong case for Viet Nam to access climate finance for investments in water supplies and sanitation. Global funds like the Green Climate Fund have been set up to support countries in their adaptation and resilience improvement efforts. Development partners should actively seek to support Viet Nam water and sanitation agencies in putting together a proposal to the GCF.

Action point: UNICEF and other development partners to identify funding opportunities from existing climate finance facilities and support nationally designated entities in the preparation of proposals to increase the climate resilience of WASH infrastructure.

1 Introduction

1.1 Objective and rationale

This report presents the state of urban and rural water supply, urban and rural wastewater collection and treatment, water supply and sanitation for schools and health centres and WASH funding and financing in Viet Nam. More specifically, the report addresses the following questions:

1. Who is funding and financing WASH services?
2. How much is going into WASH?
3. What is being funded, i.e., what services?
4. What funding and financing instruments are being used?

The main objective of this assessment is to formulate recommendations on a funding and financing strategy for WASH going forward. The Government of Viet Nam has set objectives for the WASH sector for 2030 and beyond; however, to date there has been no clear funding and financing strategy for achieving these objectives. This report aims to support efforts in formulating such a strategy by providing answers to the following questions:

1. What are the funding requirements for meeting government objectives?
2. What funding and financing instruments can and should be promoted?
3. What other actions should be taken to accelerate results?

Box 1 below provides a definition of key terms used in this report

Box 1: Definition of key terms

- **Funding**: provision of financial resources to meet specific needs.
- **Financing**: financial resources from donors or the financial market (e.g., commercial banks) that need to be repaid in the future.
- **Financing instruments:** funds, special purpose vehicles, blended finance facilities, guarantees, subsidies, first-loss capital (a pool of funding offering compensation to investors or lenders if the entity – investee or borrower – defaults), concessional financing (financing on terms and/or conditions that are more favourable than those available from the market), viability gap funding.
- **Public funding:** funding from public entities (e.g., central government, local government and donors).
- **Tariffs:** charges set to cover the costs of service provision paid by service users; good practice is to ensure water tariffs reflect actual costs of service provision to help manage demand for water provision and provide adequate sources of funding for water utilities. Some types of tariffs for consideration – 'seasonal' tariffs' or 'pandemic/disaster/climate' tariffs.
- **Taxes:** government revenues that can be used to fund WASH services; they include new sources of finance and economic instruments to internalize negative pressures on water bodies, applying a 'beneficiary-pays' principle to raise new revenues.
- **Transfers:** refers to transfers of funds from government to sub-national governments/service providers and transfers from development partners to government and or subnational governments/service providers.
- **Blended finance:** strategic use of public funds to attract private capital by improving the risk-return profile of investments and scale-up investments to the water sector.
- **Water services**: in this report, water services refers to the production, treatment and distribution of water for human consumption.
- **Hygienic water**: water quality not meeting MoH quality standards.
- **Clean water**: Water quality meeting MoH quality standards.
- **Repayable finance**: funding that assumes repayment on specified terms (e.g., interest rate, repayment period).
- **Self-supply**: access to WASH via own investments in sanitation and water systems (for example, private boreholes, onsite sanitation facility).
- **Sanitation services**: access to and use of facilities and services for the safe management of human excreta (liquid waste) across the sanitation service chain, from capture and containment through to treatment, reuse, and final disposal.
- **Hygiene services**: in this report, refers to the promotion and provision of handwashing facilities with soap.
- **WASH funding and financing**: financial resources allocated to WASH services, which can come from public funds, private finance and can be deployed via multiple instruments, including grants, loans (including microloans) and targeted subsidies.

1.2. Methodology

1.2. 1. Geographical scope

This is a nationwide assessment of the state of WASH funding and financing. As such, it seeks to provide a national overview of the situation. When assessing *who* is funding and financing WASH, this report considers:

- Central government agencies;
- Provincial governments;
- Development partners;
- Service users;
- Service providers; and
- Other funders and financiers.

However, there are limitations to drawing such a national overview. First of all, Viet Nam is a decentralized country, with a large proportion of public expenditures planned and carried out by 63 provincial governments.[1] Provinces can draw funding for WASH from multiple sources, including central government-funded programmes. Funding for WASH is also mobilized by several responsible line ministries. Finally, as will be presented in greater detail throughout the report, other key players, particularly corporatized WSCs, carry out investments; but these investments are not publicly available. In such a context, time and resources available for this study do not allow an analysis of all 63 provinces' WASH budgets and expenditures. The study was able to analyse public investments for WASH in 16 selected provinces. As conclusions are extrapolated to the country overall, it should be noted that the analysis only provides a *trend* of sector funding and financing rather than a comprehensive picture.

In order to provide a granular and reliable picture of the state of WASH funding and financing, this report specifically looks at the situation in two provinces: Soc Trang and Dien Bien. These provinces were selected in consultation with UNICEF and MARD on the basis that both still present important gaps in access to WASH services and have very different socio-economic conditions. Dien Bien is a mountainous province of the Northwest of the country with a relatively high poverty rate and difficult topographical conditions. Soc Trang (in the Mekong Delta) has comparatively well-developed economic conditions, with high population density, but is affected by climate-induced natural disasters such as drought and saltwater intrusion (see sections 2.2. and 2.3. below for more details on the two provinces' contexts). Findings on WASH funding and financing in those provinces are presented throughout the report to complement and reinforce the national overview.

1.2. 2. What is being assessed?

This study considers WASH funding and financing in urban and rural areas. In this report, WASH embeds:

- Domestic water services, including piped water services and self-supply;
- Domestic sanitation services related to human waste management, including wastewater conveyance and treatment and the construction of individual toilet facilities (solid waste is excluded); and

1 Between 2011 and 2015, sub-national capital spending accounted for about 70 per cent of total state capital spending, among the highest in the developing world (the average proportion in developing countries was nearly 40 per cent). (Government of Vietnam and the World Bank, 2017).

- Domestic hygiene, particularly handwashing behaviours and household handwashing facilities.

WASH in schools and healthcare facilities is partly considered in the report. These institutions are included in the overall assessment of WASH services access gaps. However, the report does not go into detail on current funding and financing arrangement for institutional WASH.

The study aims to shed light on the situation in relation to capital investments as well as operational expenditure, although a full, nationally accurate picture is difficult to obtain. There are hundreds of WASH service providers. In the absence of a data sharing platform on expenditures, it is not possible to draw a complete picture of the situation in Viet Nam. Operational and capital expenditures are presented as national trends for the purpose of this report. More granular and accurate information is provided for the two provinces, Dien Bien and Soc Trang.

1.2. 3. Data sources

At national level, data was collected from government, service providers, development partners' agencies involved in WASH services and private investors. In total, more than 16 national level institutions and organizations were consulted. In addition to investment data, the study team consulted government agencies to confirm the latest regulations related to WASH funding, including, for example, regulations on the use of ODA and policies on operations and maintenance cost recovery. Development partners were also consulted for insights into ongoing commitments related to the WASH sector and future prospects. These consultations also contributed to better understanding the implications of ODA regulations on the outlook for WASH funding and financing.

At provincial levels, the study team consulted provincial government agencies, service providers and other agencies involved in WASH. These consultations provided insights into the extent of government policy implementation at provincial level. At least 20 provincial institutions and organizations were consulted in this process.

Annex 1 contains the list of all institutions and organizations consulted for this report.

1.3. Report structure

The remainder of this report is structured as follows:

- **Section 2** presents Viet Nam's socio-economic and environmental contexts;
- **Section 3** presents the country's situation with WASH services and existing challenges;
- **Section 4** provides a summary of government strategic objectives for WASH and the legal context relevant to WASH;
- **Section 5** presents estimates of investment requirements to meet government strategic objectives;
- **Section 6** brings together the findings on existing funding and financing sources and instruments for WASH; and
- **Section 7** makes recommendations on a future WASH funding and financing strategy**.**

In addition, **Annex 1** contains the list of institutions consulted; **Annex 2,** the bibliography; **Annex 3,** a detailed overview of the policy and legal context for WASH; **Annex 4,** investment calculation assumptions; **Annex 5,** an overview of WASH-related development partners' portfolios; **Annex 6,** further explanation into proposed recommendations for the Fund, with some examples of structures; and **Annex 7** an analysis of WASH-related planned investments in 16 provinces.

2. Country context

2.1. Socio-economic context

With a population of 97.3 million, Viet Nam is one of South-East Asia's most densely populated countries (World Bank, 2020). Predominantly rural (63 per cent), it is urbanizing at a rapid rate in the percentage points of people living in urban settings (2.8 per cent). Viet Nam is projected to have a 104.1 million population in 2030, of which 45 per cent will be urban.

Strong GDP growth in recent years has been stalled by the COVID pandemic (World Bank, 2022). Over the past 20 years, the transformation from an agrarian economy to a manufacturing and service economy, creating 15 million jobs and coupled with improved education, has fuelled economic growth. Per capita GDP continued to grow to US$2,785 in 2020, although this was the lowest annual growth rate in the period 2011-2020 (World Bank, 2022). The unemployment rate has surged as a result of the pandemic, from 1.98 per cent in Q1 2020 to 3.56 per cent in Q4 2022. Public debt is estimated at 57.6 per cent of GDP (GSO, 2022). Government policy is to cap public debt at 60 per cent of GDP.

Recent years have also witnessed changing relationships with development partners. Although Viet Nam continues to benefit from ODA, since its graduation from a low-income economy to a low-middle-income economy, levels of concessionality are declining, encouraging the Government to introduce regulations limiting ODA dependency.

Economic growth has brought welfare to most of the population, but pockets of poverty and regional inequalities remain. While the national rate is 6.7 per cent, poverty is concentrated in rural and mountainous areas (particularly in the Northwest and the Central Highland) and among ethnic minority groups. These groups, who make up 15 per cent of the population, also represent 84 per cent of the country's poor (GSO, 2022).

Government policy is broadly conducive to foreign direct investment (FDI). Between 1988 and 2020, Viet Nam received US$231 billion in FDI.[2] As of 2020, FDI represented 7.3 per cent of GDP. Factors

2 https://www.state.gov/reports/2021-investment-climate-statements/vietnam/

attracting foreign investment include free trade agreements, political stability, ongoing economic reforms, a young and increasingly urbanized population and competitive labour costs. In 2020, Viet Nam received US$19.9 billion in FDI of which 48 per cent went into manufacturing – especially in the electronics, textiles, footwear and automobile parts industries; 18 per cent in utilities and energy; 15 per cent in real estate; and smaller percentages in assorted industries. Singapore has the largest share of direct investments in Viet Nam (34 per cent), with South Korea at 14 per cent, China at 10 per cent, Hong Kong at 8 per cent and Taiwan at 8 per cent.

The country has introduced a grading system to classify urban areas. According to Decree No. 42/2009/ND-CP on grading urban areas, communes qualify as urban if they have a population of 4,000 or more, where non-agricultural labour in the inner area, or consolidated street quarter, accounts for at least 65 per cent of total labour. Viet Nam's urban areas are further classified into the following six groups:

- Class I) Two national special cities (Ha Noi and HCMC);
- Class II) National first-class cities (Hai Phong, Da Nang and Can Tho);
- Class III) Provincial first-class cities;
- Class IV) Provincial medium-size second-class cities;
- Class V) Provincial medium-size third-class towns; and
- Class VI) Small district towns

Regional disparities are well illustrated in two provinces selected for this study (Table 1). Dien Bien (Northwest) is a large district with a lower population density than Soc Trang (Southeast). It has a significantly lower GDP than Soc Trang and is therefore more reliant on government transfers. The poverty level is nearly six times higher in Dien Bien than in Soc Trang. Dien Bien's population is predominantly of ethnic minority origin.

Table 1: Socio-economic characteristics of Dien Bien and Soc Trang

	Dien Bien	Soc Trang
Total population	598,856	1,199,653
Area (km^2)	9,541	3,311
GRDP per capita (2018) - (national average GDP is US$2,552)	1,186	1,629
Average income in rural areas (per person per year, VND million)	18.5 (US$805)	46.4(US$2020)
Poverty level (multidimensional poverty line)	29.9%	4.9%
Ethnic minority	80% (18 ethnic minority groups)	35.76% (Khmer 30%; Chinese 5.76%)
State budget support	90% of the provincial budget	68% of the provincial budget

Source: GSO and PCERWASS data

2.2. Local governance

Viet Nam is a highly decentralized country (Government of Vietnam and the World Bank, 2017)**.** It has 63 provinces, divided into 680 districts, provincial cities, and district-level towns, which are subdivided into wards (in provincial cities) and 11,000 communes (in rural districts). Each province is governed by a People's Council, whose members are elected through general elections and who designate their executive organs, the People's Committees, at all sub-national levels: PPCs, District People's Committees (DPCs) and Commune People's Committees (CPCs). DPCs and CPCs have duties and powers stipulated by the law on local government organization, but effective fiscal authority lies within PPCs. Provincial governments are more or less dependent on central government transfers, depending on their capacity to levy local taxes and generate revenues.

PPCs have discretion over planning and public expenditure. PPCs prepare five-year investment plans (the latest being for the period 2021-2025) based on their needs and priorities. The budget for plan implementation can come from the central Government in the form of dedicated programmes. For example, between 2011 and 2016, the central Government funded a dedicated rural water and sanitation programme, with funding to PPCs earmarked specifically for WASH-related investments. Central government-funded programmes can be large in scope and have multiple priority areas. This is the case for the ongoing New Rural National Target Program, in which water is one of the priority areas. However, in this case, PPCs can decide whether or not water should be prioritized for investment. Other national programmes that can be used to fund WASH include: the National Target Programme for Social and Economic Development in Ethnic Minority and Mountainous Areas and the Sustainable Poverty Reduction Programme.

2.3. Financial sector context

Viet Nam's banking sector has been growing in recent years, supported by stronger profitability. Yet Viet Nam's banking system is thinly capitalized given its operating environment risks and relative to international peers; the average capital adequacy ratios of state-owned versus private sector banks stands at 9.2 per cent versus 11.4 per cent in 2021. This is much lower than the weighted average of 19.4 per cent for banks in other major South-East Asian markets (FitchRatings, 2022).

Credit growth in Viet Nam is the highest in the region, reaching 12.1 per cent in 2019, raising sustainability concerns. The State Bank of Viet Nam (SBV) had initially set a deadline of January 2020 for the country's 17 leading banks to comply with Basel II capital adequacy requirements. Despite some progress with 10 of the 17 banks, SBV decided to extend the deadline to 2023, as other banks struggled to raise sufficient additional capital. To control credit growth, the SBV imposed limits in the first quarter of 2021 on the credit growth of each bank – specifically for: Asia Commercial Bank (ACB), the Military Commercial Joint Stock Bank (MB), the Viet Nam Technological and Commercial Joint Stock Bank (Techcombank), Tien Phong Bank (TPBank), the Viet Nam International Bank (VIB) and the Viet Nam Prosperity Joint Stock Commercial Bank (VPBank). The SBV also limited lending in the real estate sector. Partially because of limits imposed on domestic credit growth, access to domestic bank loans has been difficult, and foreign borrowing has increased sharply in recent years. In 2020, foreign borrowing accounted for about 43.7 per cent of GDP.[3]

Loans to households and businesses are rising. Consumer and business credit growth is attributed to improved credit access, reducing interest rates and numerous loan products associated with housing and corporate loans, complemented by a growing middle-class income, capable of servicing greater lending volumes.

Despite the development of the banking sector, there are challenges that may prevent the emergence of a dynamic private sector. The *first challenge* is that the allocation of credit by banks has traditionally been biased towards the **public sector, which holds a significant share** of the total credit in banks' portfolios. More recently, a disproportionate share of credit has been directed to **real**

3 https://www.lexology.com/library/detail.aspx?g=93b2d241-85b1-4aab-80fa-9061decd7a10

estate and housing, and to a lesser extent to **durable consumer goods** (for example, cars). **These two categories have crowded out the credit available for private firms, particularly small and medium-sized enterprises (SMEs)**, which hold only a marginal share of the credit market in Viet Nam. The provision of long-term credit to firms is further constrained by the short-term nature of deposits (over 80 per cent have maturities of one year or less) and by relatively high transactions costs (reflecting lack of information and weak collateral). The *second challenge* is that the financial market is highly concentrated in **banking sector credit**. Instruments such as bonds and equities finance approximately 40 per cent of all activities in Viet Nam. When contrasted with other countries in the region, such as Thailand, the Philippines and Indonesia, the size of the local bond market and of the market capitalization of listed companies remains low.[4]

Yet Viet Nam's domestic bond market is growing. By 2018, it had more than doubled, equalling 39 per cent of the country's GDP. The corporate bond market also expanded almost fivefold in this time, hitting US$6.2 billion by 2018. This expansion has not only been driven by Viet Nam's growth, economic stability, low inflation and accommodative policies, but also by domestic issuers' diversification of funding sources. Top issuers of bonds are real estate firms and banks, with securities companies and commercial banks being the top bond investors.

2.4. Environmental and climate context

Viet Nam's geography makes it highly vulnerable to climate change and natural disasters. Its extensive coastline, vast deltas and floodplains, and its location in the path of typhoons and the South-East Asian monsoon imply that many parts of the country such as the Red River and Mekong Delta are exposed to sea level rise and weather extremes brought on by climate change. Over the past 50 years, Viet Nam has experienced a 20-cm rise in sea level and a 0.5°C increase in average temperature. The Government of Viet Nam projects for 2100 an additional 2-3°C mean temperature rise, and a 57-73 cm sea level rise. In 2015 and 2016, the country suffered from a long period of drought and a water shortage crisis, affecting the central and southern parts of the country in particular (World Bank, 2016).

Viet Nam's economic growth has been accompanied by intense exploitation of natural resources. Extensive agricultural activities and use of fertilizers and pesticides have aggravated water pollution, particularly in water sources running through urban and industrial areas (World Bank, 2017).

Climate change is putting intense pressure on water resource availability. Water flows at hydrological stations in major river basins have been below average for several years. Across the country, water levels have reached historic lows, causing water shortages for agricultural production and for people's daily use. Rising sea levels are also causing deeper saline intrusion into estuaries, affecting groundwater quality (Government of Viet Nam, 2020).

Soc Trang is one of the many provinces facing water shortages due to climate change. In the late 2010s, severe droughts led to water shortages in the whole Mekong Delta region. Extensive groundwater abstraction in the region has led to the reduction of groundwater availability. In Soc Trang, groundwater depth is estimated to have decreased from 12-14m to 15-17m. As a result, water service providers must scale down production: despite a production capacity of 90,000m^3/day, Soctrangwaco (the urban water utility in Soc Trang) is only able to provide 70,000m^3/day.[5]

Dien Bien is not exempt from climate change impacts. The province is affected by weather-related hazards, particularly extreme cold, floods (tube floods, flash floods) and landslides that also damage water and sanitation infrastructure.

4 http://hanoitimes.vn/vietnams-credit-to-gdp-ratio-on-par-with-oecd-countries-300581.html

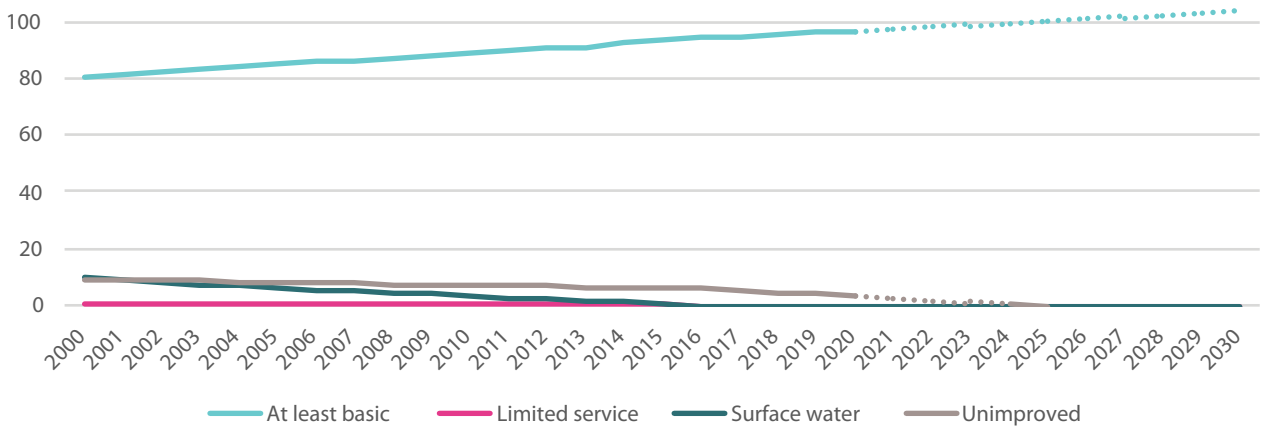
5 According to interviews with Director of Planning at Soctrangwaco.

3. Access to WASH services

3.1. Water services

Viet Nam needs to maintain its trajectory in order to achieve at least basic water services for all by 2030 (Figure 1)**.** As of 2020, there were still pockets of the population without access to at least basic water services, predominantly in rural areas (4.5 per cent).

Figure 1: Past and projected trajectory of access to water under current improvement rate (in %)



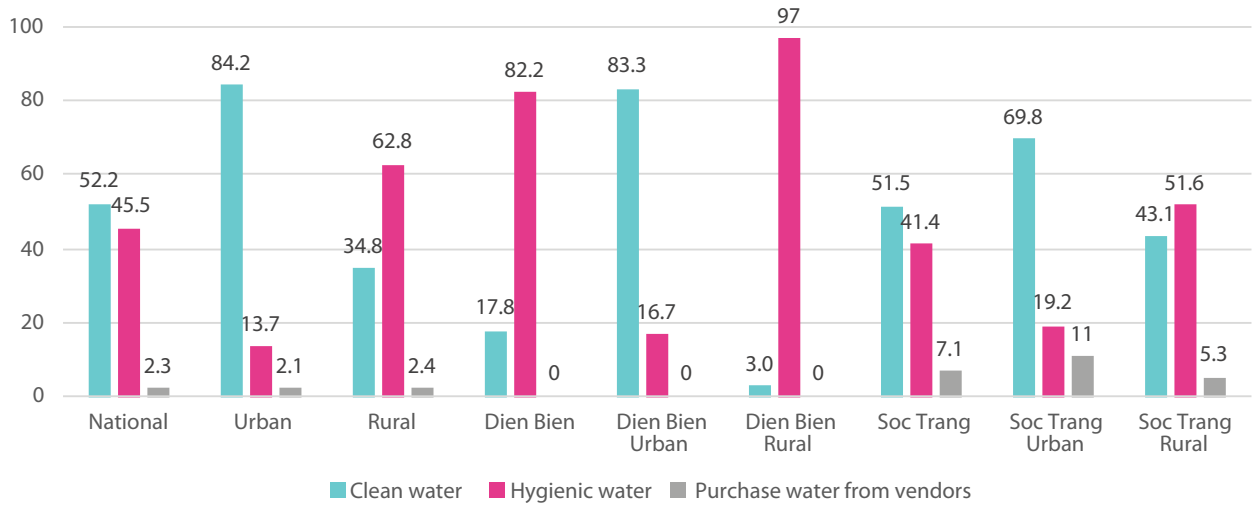
Source: Adapted from WHO-UNICEF (2022).

Note: The JMP does not have data on access to safely managed water services for Viet Nam.

There are significant gaps, however, in access to higher service levels. Nationally, only 52 per cent of the population have access to clean water, equivalent to piped water. Most of those without access to piped water reside in rural areas, although close to 16 per cent of the urban population only have access to hygienic water (WHO-UNICEF, 2022).

This gap is particularly evident in Dien Bien when considering national data (Figure 2). While 83 per cent of Dien Bien's urban population have access to clean water, the access rate falls to 3 per cent in rural areas. An important portion of rural areas of Soc Trang (57 per cent) also do not have access to clean water, but urban areas are significantly affected as well, as only 51 per cent of urban Soc Trang have access to clean water.

Figure 2: Access to water services according to government standards (in %)



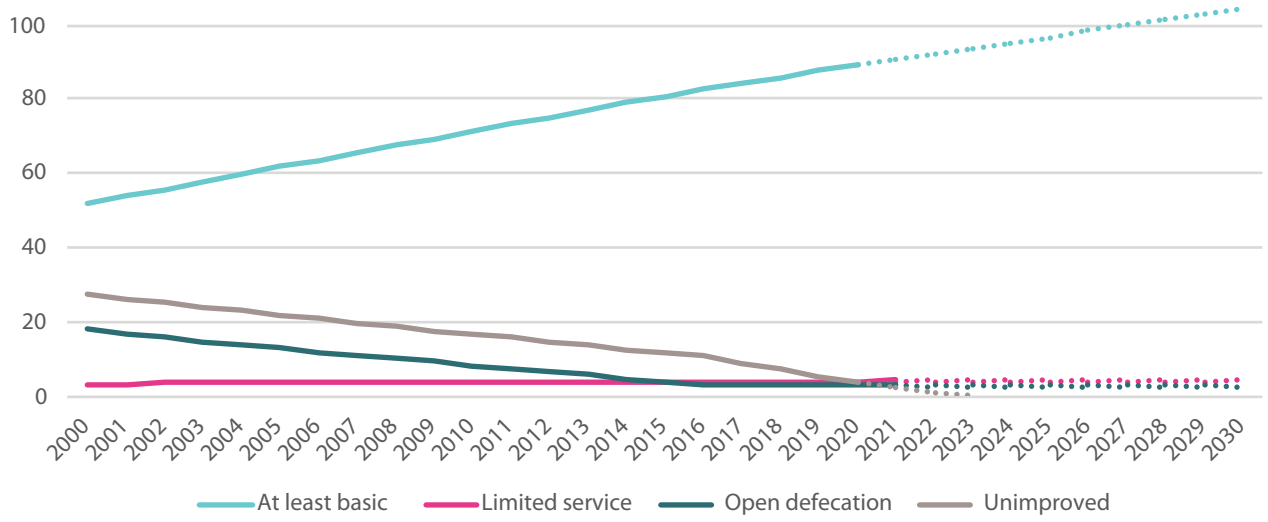
Source: General Statistics Office (GSO) 2019 census

Gaps exist between Viet Nam's regions and among ethnicities. According to the MICS 2021, rates of access to safely managed water services in the Central Highlands region versus the Midlands and Northern Mountains region stand at 35 per cent and 36 per cent respectively, compared with 66 per cent in the Red River Delta region (UNICEF, 2021).

3.2. Sanitation services

Viet Nam is also on track to achieving at least basic sanitation for all by 2030, provided that current trends remain unchanged (Figure 3). The major gap resides in rural areas, where about 1 person out of 10 uses unimproved sanitation facilities or even practices open defecation.

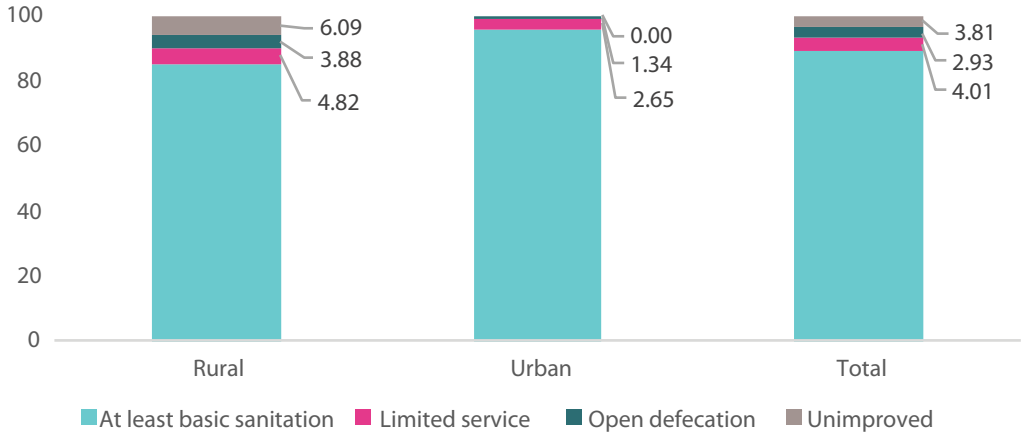
Figure 3: Past and projected trajectory of access to sanitation under current improvement rate (in %)



Source: Adapted from WHO-UNICEF (2022)

Note: The JMP does not have data on access to safely managed sanitation services for Viet Nam.

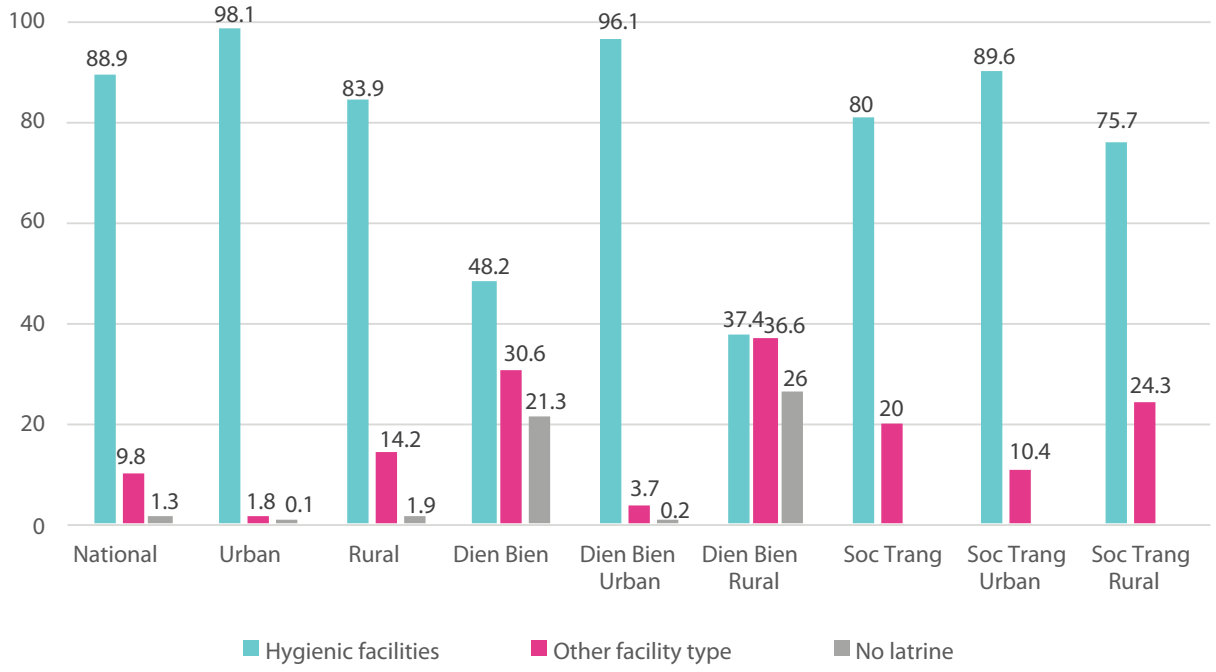
Figure 4: Access to sanitation services as of 2022



Source: WHO-UNICEF (2022)

The gap in access to sanitation between urban and rural areas is particularly evident in the case of Dien Bien, when considering national data. According to government indicators, 96 per cent of the urban population in Dien Bien use hygienic sanitation facilities, compared with 37 per cent in rural areas. Open defecation prevalence is 26 per cent in rural areas, compared with a national average of 1.3 per cent. In Soc Trang, open defecation is eradicated, but 24 per cent of the rural population uses unhygienic facilities, compared with 10 per cent in urban areas.

Figure 5: Access to sanitation facilities according to government standards as of 2019 (in %)



Source: General Statistics Office (GSO) 2019 census

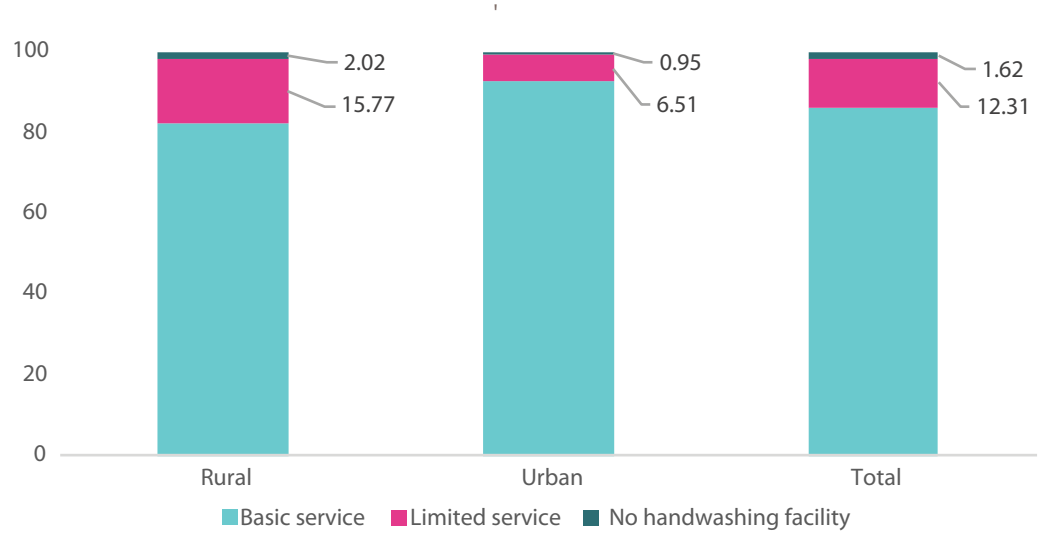
One major sanitation challenge facing Viet Nam is wastewater treatment. Estimates indicate that only 10 to 15 per cent at most of wastewater generated in urban areas is adequately conveyed and treated (World Bank, 2013). As of 2022, In Soc Trang and Dien Bien, only 50 per cent of the provinces' main cities (Soc Trang city, Dien Bien Phu and Muong Lay) have sewers with associated treatment services. The other 18 urban towns in Soc Trang and 9 urban towns in Dien Bien do not have treatment facilities.[6]

3.3. Hygiene services

Most Vietnamese (86 per cent) have access to basic hygiene services, although there have been limited improvements in recent years. Most of those without a handwashing facility or with limited services (e.g., they do not have soap) reside in rural areas. There remain pockets of populations in urban areas with limited or no hygiene services (Figure 6).

6 Interviews with stakeholders in Dien Bien and Soc Trang carried out in May 2022.

Figure 6: Access to hygiene services as of 2022



Source: WHO-UNICEF (2022)

3.4. Wash in schools and healthcare facilities

As of 2020, more than 30 per cent of schools in Viet Nam did not meet national standards for school sanitation according to MoET (Table 2**).** In practice, this represents at least 82,000 schools that require an upgrade so that they meet standards.

Table 2: Sanitation in schools

#	Indicators	School year 2019-2020	School year 2017-2018
1	Total number of latrines in public schools	270,695	
2	Percentage of school latrines meeting MoH and MoET standards (inter-ministerial circular No 13, dated May 12, 2016)	69.4%	57.3%
3	Percentage of school latrines with solid structure	72.2%	67.4%
4	Ratio of latrines per school (latrines/school)	6.22	4.63

Source: Department of Facilities (MoET), presentation at conference on October 14, 2020.

In addition, 15,979 schools (37 per cent) throughout the country did not have running water with soap.

Quantitative data on WASH in healthcare facilities is scarce. According to 2016 figures from VIHEMA, most healthcare facilities can provide water to staff and patients, but some still rely on tube wells or dug wells. Most hospitals also have latrines; however, while 100 per cent of staff latrines are operational, only 50 per cent of patients' latrines are operational.

4. Strategy and legal context

This section presents a summary of government strategic objectives for the sector and for each sub-sector and sets out the legal instruments made available to achieve these objectives. The objectives and instruments provide the basis for cost estimates in section 5 and recommendations in section 7. A more detailed analysis of the strategy and legal context is set out in Annex 3.

4.1. Strategic objectives for urban water supply and sanitation

The Government's objective is to achieve 100 per cent coverage of piped water supply services in all cities by 2025. The Government also sets objectives for average water consumption of 120 l/c/d, with water quality meeting government standards of clean water (Prime Minister Decision No. 2502/QĐ-TTg, dated December 22, 2016). The Government aims for a 24-hour water supply to cities of class IV and above (provincial medium-size second-class cities and up).

The Decision assigns MoC with responsibility for implementing these objectives. A key strategic orientation is the development of urban water supply in combination with water supply for concentrated rural residential areas, both through the promotion of PPPs for investments.

In relation to urban sanitation, the government objective is that 50 per cent of wastewater in urban centres of class II and above is treated. Prime Minister Decision No. 589/QĐ-TTg, dated April 6, 2016, also states that 20 per cent of wastewater in urban centres of class III, IV and V is collected and treated.

The MoC is also assigned responsibility for implementation of this Decision on wastewater. This means that the MoC is also assigned responsibility for supporting sanitation development in small towns or densely populated rural areas. Among strategic orientations, the Government will focus investment capital on drainage/sewerage systems in large cities and river basins, while prioritizing investments to address environmental degradation. The Decision also sees PPPs as a financing source and makes strong recommendations for PPCs to develop urban sanitation plans and to implement a roadmap on wastewater service tariffs.

4.2. Strategic objectives for Rural water and sanitation

The national strategy on rural water supply and sanitation is provided by Prime Minister Decision No. 1978/QD-TTg, dated November 24th 2021. The Decision provides specific sub-sector targets for 2030, as follows:

- 65 per cent of the rural population have access to clean water of standard quality with a minimum quantity of 60 litres per day (lpd);
- 100 per cent of rural households, schools and healthcare facilities have hygienic latrines that meet standards and regulations;
- 100 per cent of rural people regularly practice personal hygiene;
- 25 per cent of concentrated rural residential areas have access to domestic wastewater collection services; and
- 15 per cent of domestic wastewater is treated.

The Decision also puts forward implementation measures, including:

- Policies to support investments in difficult, remote and mountainous areas;
- Financial support to poor households;
- Promotion of socialization/equitization and enterprises;[7]
- Education and behaviour change campaigns;
- Implementation of water self-supply in hard-to-reach areas;
- Professionalization of water systems management;
- Roadmap for rural water tariff implementation; and
- Promotion of simple hygienic latrines and low-cost treatment.

While MARD is assigned responsibility for coordinating strategy implementation, the MoC is assigned responsibility for implementing strategy on domestic wastewater collection.

It should also be noted that Party Resolution No. 19-NQ/TW of National Committee Congress No.3, dated June 16, 2022, on agriculture, rural population and rural areas, has set the objective of 80 per cent of rural populations accessing clean water by 2030.

In addition, since 2004, the Government of Viet Nam has been promoting and implementing a microcredit programme to facilitate households' investments in rural water and sanitation. Successive Prime Minister Decisions on microcredit programmes for implementation of rural water and sanitation strategy (in 2004, 2012, 2018) have made available lending products from the VBSP. These products are available for households residing in rural areas without any water facilities, or with degraded facilities, and to rural households that do not have a sanitation facility. The maximum amount of credit for each type of work is VND10 million (US$400) per household. In total, households can borrow up to VND20 million (US$800) for water and sanitation improvements, at a 9 per cent interest rate.

7 Socialization refers to private investments and equitization in the sale of government shares to private investors.

4.3.Water and wastewater tariff policy

The Government of Viet Nam has a policy of a full-cost recovery water tariff (Circular No. 75/2012/TTLT-BTC-BXD-BNN, dated May 15, 2012). The water tariff for urban and rural domestic users is decided by the PPC, based on MoF Circular 44/2021/TT-BTC, dated June 18, 2021, with two important principles: (i) Pro-poor or cross-subsidy policy via the application of a progressive tariff, with households consuming more water paying a higher tariff[8]; and (ii) where the average tariff is set lower than the costs, service providers are entitled a subsidy from the PPC[9].

Similarly, government policy is that the wastewater tariff is calculated based on full cost recovery. Prime Minister Decree 80/2014/ND-CP, issued on August 6, 2014, provides guidance for tariff calculations. It also states that if PPCs set up the tariff lower than costs, they need to supplement revenues from tariffs.

4.4. Private sector participation (PSP) policy

PSP for water and sanitation is promoted in the form of equity finance ('equitization'), socialization, PPP and operation and maintenance (O&M) contracts. Definitions and key features of the main forms of PSP in Viet Nam are summarized in Table 3 below. Overall, the current framework is not sufficient to attract private investments in sparsely populated areas, rural and mountainous areas, and wastewater collection and treatment projects. Incentives are also lacking for extending access to piped water in currently unserved urban areas.

As shown, until 2020, the Government of Viet Nam had a strong policy of divestment from WSCs, with the aim to diversify sources of finance for water. As of 2022, nearly all (urban) WSCs were more than 50 per cent owned by private investors.[10] However, equitization has not been possible for all provinces due to a lack of private sector interest. In Dien Bien, for example, the WSC is still nearly fully owned by the PPC, with a small share held by WSC staff. Only one rural water utility (in Hau Giang) has been equitized. It should also be noted that the revenue from the equitization of water supply companies has not be retained in the water sector. Revenue has been reallocated to the local budget to be used for other urgent purposes.

In 2021, the Government put equitization on hold, with a clear policy to limit divestment of PPC governments from WSC. A list of 54 WSCs that need to stop equitization was published by the Government (see Annex 3). The main rationale is for PPCs to retain some degree of control over WSCs' operations and investment decisions.

There is limited clarity over performance agreements between WSCs and PPCs as part of the divestment/share of sales process. The Government has no regulation over such performance agreements, which could act as incentives for investments in harder to reach areas – including urbanized areas.

8 According to Article 9, Circular 44/2021/TT-BTC, households who consume less than 10m^3/month should pay only 80 per cent of the average tariff, while households who consume more than 30m^3/month should pay 250 per cent of the average tariff.

9 Sub-clause 2, Article 11, Circular 44/2021/TT-BTC

10 VWSA data.

Table 3: Overview of main forms of PSP for water and sanitation in Viet Nam

	Equitization	Socialization	PPP	O&M
What is it	Sale of WSCs' shares to private investors	100% private investments with a business license regime	Contracts between government party and private company for operations of water and wastewater facilities with investment obligations	Contracts between government party and private company for operations of water and wastewater facilities without investment obligations
Key features	Since 2016, various Prime Ministers' Decisions for urban WSCs to sell more than 50% of shares to investors Prime Minister Decision in 2020 to stop divestment of 54 WSCs (see list in Annex 3) 2021 Decision: State to hold majority shares (from 50 per cent to less than 65 per cent) after equitization of all state-owned water exploitation, production and supply companies	The water sector is a priority investment sector for government based on Decree 59/2014/NDPC on socialization policy Private enterprises can benefit from corporate tax reduction	PPP law (2020): minimum capital requirement for projects to be tendered as PPP is VND200 billion (US$8 million) PPP contracts can provide some security for private sector (set tariffs, period…)	Suitable for investments that will not be fully recovered (for O&M of wastewater treatment plants), but needs strong and transparent bidding as well as performance indicators included in the O&M contract

Experience with socialization indicates a mixed picture. In many areas, private investors effectively compete to obtain investment licenses for water supply projects. However, these tend to be in populated areas (mostly in the Delta region). There is less investment interest in sparsely populated and mountainous rural areas. In Dien Bien, for example, no private investor is involved in water supply. Similarly, private investors are not yet interested in wastewater collection and treatment projects other than through O&M contracts. More importantly, after issuing an investment license, government agencies generally have little control over the production and business activities, as well as service quality provided by private investors.

PPP policy is rather restrictive for water and sanitation investments. With the PPP law requiring minimum capital of VND200 billion (US$8 million) for projects to be tendered as PPP, many small and medium size investment requirements would not be eligible. As a result, smaller enterprises cannot enter into PPP agreements. PPPs also come with a limited timeframe, which is less attractive compared to the socialization option. As a result, until now only a handful of PPP contracts have been signed and implemented in the WASH sector. Most contracts are O&M contracts for wastewater treatment plants. However, such contracts also have shortcomings. For example, it is difficult for authorities and communities to access and monitor the operations and discharge of WWTPs under O&M contracts. Although developed to attract foreign direct investment, the PPP law does not stipulate that the Government will guarantee obligations of state-owned enterprises (SOEs) or other public counterparts.

PSP in the management of rural water supply is very limited, in great part due to lack of guidance

on and regulatory tools for contracting out. Many rural water supply schemes have been constructed with public funds under NTPI, II, and III. However, there lacked a clear approach to ensure sustainability of water systems operations. Some schemes were sold out to the private sector, others handed over to PCERWASS, DPCs or CPCs for O&M. Some, PPCs (asset owners) aimed to contract out to the private sector for operation and maintenance, but there is a lack of detailed guiding documents from the central Government on important procedures for contracting out. Among others, are missing: (i) the bidding procedure for selecting O&M contractor and (ii) a template O&M contract documents, etc. The recently issued Decree 43/2022/ND-CP (on the management and use of clean water supply infrastructure assets) addresses some of these gaps as it focuses on the valuation of water infrastructure assets, including handover processes and price determination. This is one step for a more structured engagement with the private sector via PPP contracts. MARD is working on additional guiding documents that should help increase the tender of PPP contracts for rural water supply.

4.5. Relevant regulations on use of ODA

The Government has introduced restrictions on the use of ODA. According to Decree No. 114/2021/ND-CP, ODA loans may only be used for development investment (infrastructure). This implies that lending cannot be used for 'soft' activities, e.g., the promotion of hygiene or of water and sanitation services. This therefore limits the scope of ODA-funded projects for the sector.

Regulations have also been introduced on how ODA funds should be channelled. Provinces are now in charge of project implementation, with their own implementation unit. This level of decentralization results in developing partners having multiple counterparts when funding a multi-province project. For some development partners, this may imply higher transaction costs.

Finally, the Government has revised its on-lending ratios to provinces. According to Decree 79/2021/ND-CP, provinces with a central-to-provincial expenditure budget ratio of 70 per cent or more will have their on-lending ratio reduced from 30 per cent (old regulation) to 10 per cent of ODA loans; for provinces with a central-to-provincial expenditure budget ratio of 50 to 70 per cent, the on-lending rate will reduce from 40 per cent (old regulation) to 30 per cent of ODA or concessional loans. The regulation puts richer provinces in a better position to mobilize ODA loans, including for WASH investments.

5. Investment needs

This section presents investment requirements to meet the government objectives summarized above. All costing assumptions, including methodology are presented in detail in Annex 4.

5.1. Summary of costing methodology

The costing presented below was made using baseline data from the 2019 GSO census on access to clean and hygienic water and on hygienic latrines in urban and rural areas. Baseline data on wastewater treatment was gathered from MoC and consultants' estimates based on the literature reviewed (and findings presented above). With regard to water and sanitation in schools, data on the number of schools without water and sanitation facilities were extracted from the MoET.

Using this baseline, population growth data and government objectives (as presented in section 4), calculations were made to obtain:

- The total m^3/day of additional water capacity and m^3/day of water production that needs upgrading from hygienic to clean water, using a consumption requirement of 120 lpd in urban areas and 60 lpd in rural areas; and

- The total m^3/day of wastewater that needs to be treated (assuming that 80 per cent of all water produced needs to be treated).

Data collected indicate that all health centres have sufficient water supply and sanitation facilities for healthcare staff and patients. The problems rather relate to the operations and maintenance of these facilities. As a result, costing did not include Capex for water and sanitation facilities in health centres.

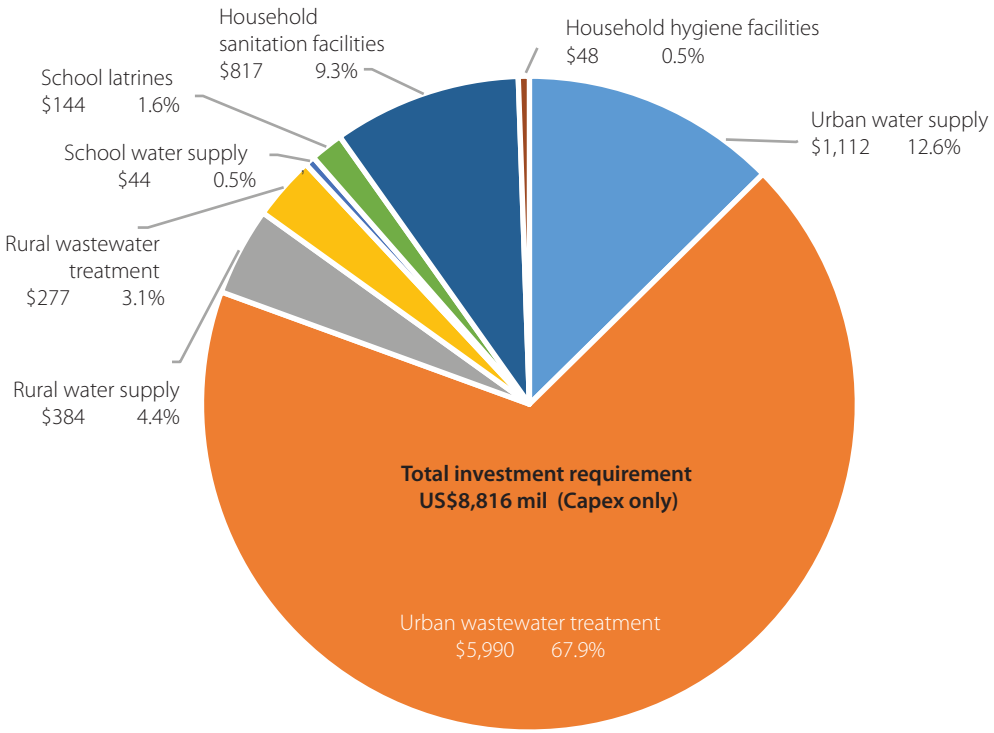
The next step was to apply unit costs to estimate the overall cost of this infrastructure development. Water unit costs were extracted from MoC guidelines on the estimated cost of each m^3/day of additional clean water capacity produced and the cost of each m^3/day upgraded from hygienic to clean water.

5.2. Investment requirements for achieving government objectives

The total estimated capital investment requirement for meeting government objectives by 2030 is VND204.3 thousand billion (US$8.8 billion), equivalent to 3 per cent of Viet Nam's 2020 GDP. As presented in Figure 7, 69 per cent of the capital requirement is to cover the cost of urban wastewater treatment (and sewerage). Urban water supply represents the next largest investment (13 per cent), followed by rural water and wastewater. Meeting government targets for 100 per cent hygienic toilet facilities will require US$817 million. Extending access to household hygiene (handwashing facilities with soap) represents a fraction of investment needs (US$48 million) to 2030. Finally, it is estimated that at least VND3.3 thousand billion (US$144 million) and VND1.01 thousand billion (US$44 million) is required to meet government objectives for sanitation in schools and water supply in schools, respectively.

It is important to note that these investment requirements only relate to infrastructure/facility development. They exclude costs related to communication and to engagement with service users for services promotion, though these are critical for the uptake of services. They also do not include management costs related to procurement and monitoring. Together, these costs can add up to more than 20 per cent of total investment needs. Table 4 brings together targets and investment needs.

Figure 7: Total capital investment requirements for meeting government objectives by 2030 (in US$ million)



Source: Consultants' estimates based on government standards and unit costs; and SDG costing (for hygiene)

Table 4: Targets and investment needs by sub-sectors

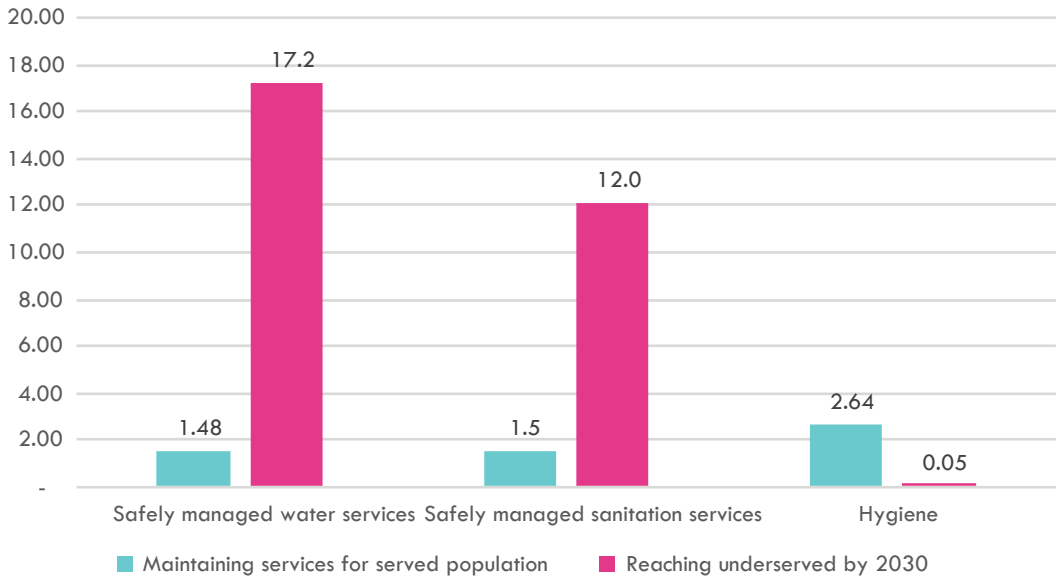
Sub-sector	2030 target	What needs to be funded	Estimated Capex cost (VND thousand billion)	% total cost
Urban water	100% access to clean water	• Upgrade services from hygienic to clean water for 4.5 million people and provide additional clean water to 4.8 million people, equivalent to 544,535 m^3 of water/day that need to be upgraded and an additional capacity of 1,778,529 m^3/day to be developed	25.78	12.6%
Urban wastewater	40%-60% of wastewater treated	• Additional collection and treatment capacity of 2,082,318 m3/day to treat at least	138.82	67.9%
Rural water	80% access to clean water	• Upgrade services from hygienic to clean water for 23.5 million people, equivalent to 1,414,698 $m^{3/}$day to be upgraded	8.89[11]	4.4%
Rural wastewater	15% of wastewater treated	• Additional capacity of collection and treatment capacity of 435,403 m^3/day	6.43	3.1%
Household sanitation	100% access to hygienic facilities	• 1,262,874 toilets to be constructed or upgraded	18.94	9.3%
School sanitation	100% access to hygienic facilities	• 18,828 additional school toilets to be constructed	3.33	1.6%
School water supply	100% access to clean water	• Additional capacity of 230,413 m^3/day	1.01	0.5%
Installation of hand hygiene facilities	100% practicing hand hygiene	• Additional hand hygiene facilities for 17 million people	1.11	0.5%
		Total cost	***204.33***	***100%***

11 The study team notes that this figure of VND8.89 thousand billion (for the new and upgraded water treatment facilities and associated networks, excluding water resources development) which is far below the estimate of VND60 trillion for rural water up to 2030 of the Program on ensuring rural water supply under the Project on Water Security to 2030 with a vision to 2045. Key determinants of the present costing methodology are population growth and unit costs, as detailed in Annex 4. The present study estimates that rural population will decline (in line with GSO data). Unit costs used are based on those provided by the Ministry of Construction.

5.3. Investment requirements for achieving the SDG 6

SDG 6 investment requirements, as estimated by the SWA costing tool, are about six times higher than the above estimates. In total, achieving the SDG 6 level of safely managed water and sanitation (this means *100 per cent of the population* have access to continuous water services on premises, with quality monitored to WHO standards, and with safe wastewater and faecal sludge treatment) requires US$34.9 billion in total (13 per cent of 2020 GDP), including US$18.6 billion for water services and US$13.5 billion for sanitation services (Figure 8). It should also be noted that the SDG costing also takes into account capital maintenance requirements for those already being served – although the bulk of the cost requirement comes from extending services to the underserved.

Figure 8: Investment requirement for achieving and maintaining SDG 6 (US$ billion)

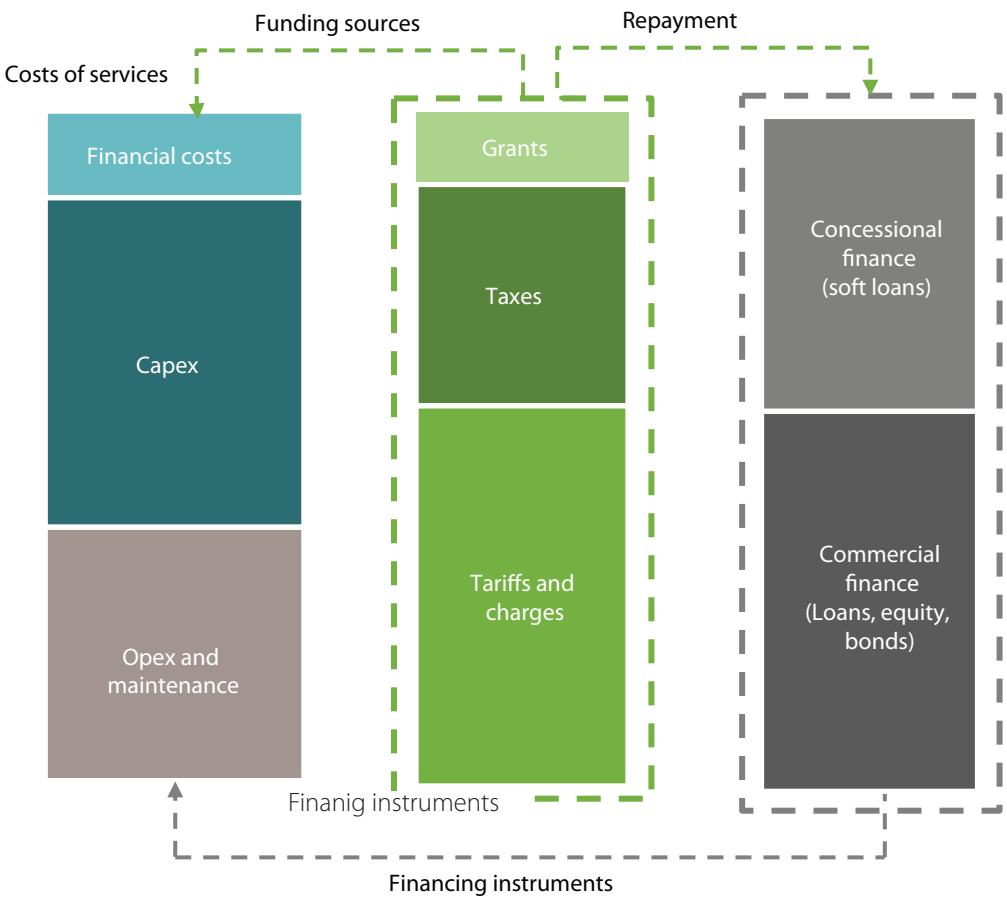


Based on Figure 8, estimates presented in section 5.1 should be read as conservative estimates – or minimum investment requirements.

6. Funding sources and financing instruments for WASH

This section presents existing funding sources and financing instruments for WASH in Viet Nam. As shown in Figure 9 below, funding sources to cover WASH services costs – Capex, operating expenses (Opex) and financial costs) are taxes (or government transfers) and tariffs (revenues levied from service users) and any form of grant (e.g., donations). Financing instruments are repayable finance instruments (such as loans, which can be concessional or not). Ultimately, all finance mobilized will be repaid via tariffs and/or taxes. In this section, we describe how each of these funding sources and instruments are mobilized across WASH sub-sectors. As with the rest of the report, we present the national overview complemented with evidence gathered from the two provinces, Dien Bien and Soc Trang.

Figure 9: What needs to be funded and how



Source: Authors, based on OECD

6.1. Taxes

Taxes refer to government funding. They include transfers from central government to local government (non-repayable) and local government's (PPCs') own funds.

6.1.1 Urban water

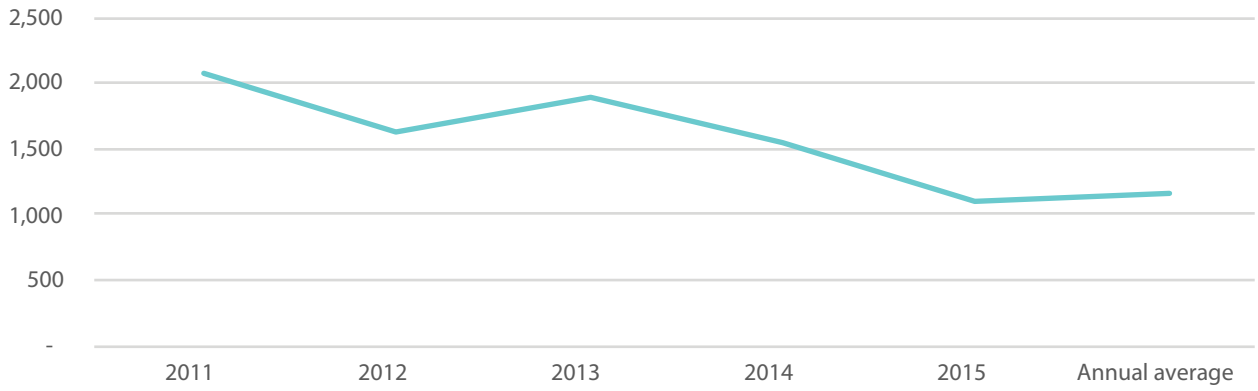
Funding from central government or PPC for Capex and Opex related to urban water is very limited. There is no comprehensive national overview of central and local government expenditure on urban water services. An analysis of investment plans of 16 provinces[12] for the period 2016-2020 indicates that only 6 per cent of total investments planned for WASH in the provinces was allocated to urban water supply (see Annex 7 for more details). Because water tariffs in urban areas mostly achieve full cost recovery, WSCs are mostly expected to fund water development in these areas – although there are exceptions. In Dien Bien, for example, the WSC has made a request to the PPC for financial assistance for the development of a raw water source, a request that had yet to be granted as of 2022. In the case of Soc Trang, other than limited funding for water quality monitoring (VND100 million annually), there is no transfer of funds from PPC for urban water services.

12 Bac Kan, Thai Nguyen, Kon Tum, Son La, Cao Bằng, Phu Tho, Ha Giang, Nam Dinh, Thanh Hoa, Hanoi, Gia Lai, Dak Nong, Quang Binh, Yen Bai, Điện Bien, Soc Trang.

6.1.2 Rural water

Funding from central and local government for rural water is decreasing (Figure 10). Since the end of the central government-backed Rural Water and Sanitation NTP, which ran from 2011 to 2016, most funding from central government to the sub-sector is channelled via the New Rural NTP. However, the New Rural NTP is a multi-sector rural programme in which PPCs have discretion over the use of funds, based on the needs they identify. MARD estimates that at best 3 per cent of the total New Rural NTP budget is used for water and sanitation. As described below, funding from the rural NTP can be below this figure. Based on the use of NTP funds in Soc Trang and Dien Bien, we can estimate that all funding for WASH under the NTP is allocated to (rural) water supply.

Figure 10: Central government and local government funding for rural water under the dedicated sector NTP (2011-2016) and new rural NTP (in VND billion)



Some central government-led programmes have been recently approved to address water shortage in designated areas. Among these are the following projects:

- MARD Decision No. 3271, dated July 22, 2021, for water works in (i) Luc Khu area, Cao Bang province, (ii) the rocky highlands of Ha Giang province and (iii) Muong Te district of Lai Chau province (investment of VND302.2 billion or US$13 million); and

- MARD Decision No. 3356, dated July 26, 2021, for water works in 7 provinces of Mekong delta with polluted water sources, water scarcity areas and areas affected by saline intrusion (investment of VND1,104 billion or US$48 million).

In addition, the NTP for socio-economic development in ethnic minority and mountainous regions for the period 2021-2030 (Phase I: 2021-2025) has specific objectives for WASH. These sit among 10 different development objectives. A total of VND137,644.9 billion is planned in investments for Phase I. Specific allocation to WASH is at PPCs' discretion.

Expenditure data by PPC governments in Soc Trang and Dien Bien indicate that funding for rural water represents a small proportion of their budgets. Between 2016 and 2020, Soc Trang PPC allocated an estimated VND109 billion (US$4.7 million) to rural water supply from central and local government funding. The New Rural NTP only provided a fraction of these funds, VND2.69 billion or 1.1 per cent of Soc Trang's investments in WASH. Dien Bien allocated VND149 billion (US$6.4 million), including funds from the New Rural NTP of 60 billion (which represent 21 per cent of funding for rural water). Rural water represents only 0.06 per cent of Dien Bien total rural NTP budget.

6.1.3 Urban sanitation

Urban sanitation is receiving the bulk of central government and local government investment for WASH. The analysis of a sample of 16 PPCs' investment plans for 2016-2020 reveals that a total investment of VND4.3 thousand billion (US$187.3 million) was planned for urban sanitation (sewer and wastewater), representing 58 per cent of total planned investments for WASH all provinces combined (see Annex 7). The Central Government is also supporting investments in wastewater by facilitating ODA for the sub-sector.

This trend is confirmed in Soc Trang and Dien Bien. In Soc Trang, an estimated VND392.1 billion (US$17 million) was invested in wastewater services between 2016 and 2020 – nearly double that of rural water. In Dien Bien, VND255 billion (US$ 11.1 million) was contributed to investment in wastewater services in Dien Bien City.

In some provinces, in addition to funding investments, government transfers (provincial subsidy) are used to cover some of the O&M costs of the sewerage network and wastewater treatment. This is the case in Dien Bien, where current tariff revenues are not sufficient to cover all O&M costs. Based on current revenue levels, Dien Bien city allocates VND3 billion each year to the operator (URENCO) in addition to the VND7.8 billion (US$312,000) generated from tariffs. In the case of Soc Trang, however, revenues from tariffs are sufficient to cover basic O&M and some depreciation. While there is a transfer from the city government to the URENCO, with total revenues from wastewater tariffs of VND13 billion, VND10 billion are used to pay for URENCO, and VND3 billion are put into the reserve fund for future shortfalls – as of 2022.

6.1.4 Rural sanitation and hygiene

There is no evidence that any significant government funding is currently directed to rural sanitation and hygiene. In principle, PPCs can allocate funding from the New Rural NTP to rural sanitation and hygiene; however, based on the experience in Dien Bien and Soc Trang, activities in these areas are very limited. Campaigns for sanitation and hand hygiene are bundled with wider health promotion activities. There is little evidence of the prominence of these two items in wider health promotion campaigns. In both Dien Bien and Soc Trang, Departments of Health (DoH) had no specific budget line for sanitation and hygiene and were not planning any related activity.

6.2. Tariffs and charges

6.2.1 Urban water

At the national level, most tariffs in place for water supply in urban areas appear to enable WSCs to cover all costs, including depreciation. In the absence of publicly available data (and regulation more generally), there is no hard data to back this claim. Both in Soc Trang and Dien Bien, WSCs report that they are able to meet all operating costs. There is also anecdotal evidence that revenues from tariffs can support WSCs in carrying out some additional network extensions. According to MoF Circular 44/2021/BTC, a progressive tariff policy has to be implemented, whereby water users who consume higher amounts of water per month should be paying a higher tariff. All WSCs appear to apply this progressive tariff structure.

Table 5: Tariff situation for urban water in Dien Bien and Soc Trang

	Soc Trang	Dien Bien
Average tariff	9,200 VND/m^3	10,500 VND/m^3
Total investments (2016-2020)	VND259.4 billion (US$11.2 million)	VND110 billion (US$4.7 million)
Investment from depreciation fund	59% (VND153 billion in total)	100% (VND22 billion annually)

6.2.2 Rural water

The situation with tariffs in rural areas varies greatly from province to province. While some service providers are able to generate revenues that cover all O&M costs and some depreciation, others struggle to even cover basic O&M costs. The PCERWASS in Dien Bien and Soc Trang illustrates this contrasting picture (Box 2).

Poverty, dispersed populations and entrenched habits (use of surface water, unwillingness to pay) are among key factors behind the poor performance of some rural water service providers. In areas like Dien Bien, community sensitization and engagement on the benefits of piped water and the rationale for a tariff are likely to be required in the short to medium-term.

In this context, water systems, sometimes newly built, are at risk of failure without government support for operations. In Dien Bien for instance, the sustainability of the scheme requires government transfers (subsidies), including transfers to cover operational costs. In practice these transfers are yet to happen. Across Viet Nam, no PPC transfers operating budget to water service providers.

Box 2: Rural water in Soc Trang and Dien Bien - a contrasting picture

The PCERWASS in Soc Trang is a well-performing utility (Table 6). It is the sole provider of piped water services in rural Soc Trang. The PCERWASS operates as a state-owned enterprise with administrative and financial autonomy, managing 147 water systems (generating 22 million m^3/year) and 129,587 connections. With an average tariff of 5,750 VND/m^3, the PCERWASS is able to implement a policy of subsidized connections and 3m^3 of water for eligible households (those eligible for social benefits). In 2022, the PCERWASS completed the construction of a 2,000 m^3/day water system that will distribute water to 2,000 households. The total investment of VND12 billion was funded via a grant from a local fund (VND3 billion) and PCERWASS contributed from its own funds (from its depreciation fund). However, 62,000 households are still to be connected to the PCERWASS network. Challenges include remoteness of households but also depleted groundwater availability.

Table 6: Soc Trang PCERWASS revenues and costs

	Revenue (Bil VND)	Costs (Bil VND)	Operating Ratio
2020	92.30	91.11	1.01
2019	71.09	70.09	1.01
2018	62.86	56.84	1.11

The PCERWASS in Dien Bien is in a different situation. It oversees the management 1,017 rural water supply schemes, of which only 550 are nearly sustainable – most of them being operated by the commune's government or communities. From 2019-2021, the direct management of 12 schemes was transferred to PCERWASS, to be constructed under the World Bank 21 provinces project. As a result, the PCERWASS is in charge of 6,000 connections across the province. However, revenues from tariffs (set between 3,000-4,000 VND/m^3) barely cover staff costs. The PCERWASS is not yet able to generate any revenue for basic maintenance. A particular constraint in the province is the population's unwillingness to pay for water. In many areas of the province, populations still need to shift to accepting water as a service rather than a free resource. Another important constraint is the significant level of poverty. There is not yet any transfer from the PPC to PCERWASS for covering operating costs.

User contributions to the rural water sub-sector also come in the form of investment household self-supply. Typical costs incurred vary between VND10 million and up to VND30 million, depending on the type of treatment system installed. It has not been possible in the context of the study to estimate overall amounts that are being invested by households in recent years. It is clear however that not all rural populations can afford such investments.

6.2.3 Urban sanitation

Where in place, tariffs and charges for sewer and wastewater treatment can cover basic O&M, and at best, parts of depreciation as well. However, tariffs (based on actual water consumption and wastewater discharge) are not in place in all provinces. For example, Soc Trang applies a wastewater tariff, while Dien Bien applies an environmental protection fee for discharging domestic wastewater into the environment.

Table 7: Wastewater tariff situation in Dien Bien and Soc Trang

	Dien Bien	Soc Trang
Wastewater tariff	• Environmental fee at 10% of monthly water bill • VND7.8 billion collected annually	• VND2,600 VND/m^3 of water consumed • VND13 billion collected annually
Cost-recovery	O&M only	O&M and basic maintenance
Additional transfers (subsidies) from PPC	Yes, VND2.8 billion per year to cover maintenance costs	No

6.2.4 Rural sanitation and hygiene

The main form of user contribution in this sub-sector is via investment in household sanitation and hand hygiene facilities. Typically, households spend up to VND15 million (US$600) for a toilet facility with a septic tank. Due to resource constraints, the study could not identify amounts effectively spent by households in Dien Bien and Soc Trang. There is also limited data on the affordability of household latrines, i.e., whether this investment amount represents a major barrier for households to acquire sanitation facilities. Results from projects such as the World Bank-funded Results-Based Scaling Up Rural Sanitation and Water Supply Program implemented in 21 provinces indicate that facilitating household investments requires the development of markets for affordable sanitation facilities – i.e., building the supply chain of materials while engaging communities via targeted communication campaigns on the benefits of sanitation investments.

6.3. Concessional finance

Additional details on development partners' portfolios related to WASH can be found in Annex 5.

6.3.1 Urban water

There is virtually no ODA for urban water projects, as WSCs are expected to carry out all investments. Although WSCs use debt finance, they tend to rely on commercial banks rather than ODA. Despite its concessional element, ODA lending can be less attractive due to donor agency compliance requirements. With commercial banks increasingly familiar with the water sector – and urban water generating surpluses for operators – access to commercial finance is increasingly available for urban water investments. Soc Trang and Dien Bien have not benefited from any ODA for urban water supply in recent years. In other provinces, some development partners may be financing urban water supplies, but most financing comes from wider urban development projects.

VDB, the national public development bank, could provide more accessible concessional finance, but is facing limitations. According to Decree 31/2017/ND-CP, VDB can use domestic capital to lend at preferential interest rates to water supply enterprises, using its own credit risk for these loans. However, VDB has not been able to deploy any loans due to issues with the mechanism for determining loan interest rates. According to VDB, government and relevant ministries do not have a specific regulatory framework which can provide a framework for VDB to determine the appropriate interest rate: one that supports the sector but also ensures VDB's ability to cover capital mobilization and loan servicing costs.

VDB can be assigned by the Ministry of Finance (MoF) to act as a financial intermediary in ODA-funded projects, including water supply. VDB has managed capital from the Agence Française de Développement (AFD) and the World Bank, which has been used for urban water supply development. However, the scale of these projects is small. From 2018-2019, VDB only financed one project and received 5-6 projects for appraisal.

6.3.2 Rural water, sanitation and hygiene

ODA for rural water, sanitation and hygiene has significantly declined in recent years. Among development partners, the World Bank and the Asian Development bank had the largest rural water portfolio, but their projects have recently ended or are coming to an end. This is the case of the US$200 million World Bank project implemented in 21 provinces, which incorporated an important sanitation component, but which is ending in 2022.

Another form of concessional lending for rural water and sanitation is made available via VBSP. VBSP is a government-owned bank established to provide financial support for the poor. Since 2004, VBSP is authorized to provide loans to eligible households for the construction and installation of water and sanitation facilities. Lending capital for these investments is provided by the MoF. Nationally, VBSP disbursed VND35 billion (US$1.4 million) in loans for rural water and sanitation in 2019. With these loans, households can purchase water tanks, well construction or toilet construction services and/or related material. VBSP is active in all provinces, including in Soc Trang and Dien Bien (Box 3). Water and sanitation loans are reported to be in strong demand and to perform well. Communication on loan availability and demand generation is carried out with support from the Women's Union, an organization with representation down to commune-level.

Box 3: Water and sanitation lending at VBSP branch in Dien Bien

Since the start of the programme in Dien Bien, 110,000 households have benefited from the VBSP water and sanitation loan product. In total, these loans represent VND230 billion (US$9.2 million). As of 2022, the VBSP branch in Dien Bien managed 7,589 water and sanitation loans with VND134 billion in loans outstanding. Disbursement of these loans has enabled 28,601 water and sanitation investments, of which 14,000 were for water supply. The loan tenor offered for these loans is 5 years at an interest rate of 9 per cent. According to regulations, the maximum amount that can be borrowed for each type of investment is VND10 million.

In Soc Trang, VBSP has provided such loans to 35,613 borrowers for a total lending capital of VND502,993 million ($20.1 million).

Source: Authors, based on consultation with VBSP branch managers

Finally, the study identified one concessional lending model from the PPC government to the PCERWASS in Soc Trang. Faced with increased pressure to extend water supply, the provincial government extended a VND80 billion (US$3.4 million) interest-free loan to the PCERWASS to be repaid in 5 years.

6.3.3 Urban sanitation

ODA is currently an important source of funds for urban sanitation, particularly sewer and wastewater development. The World Bank, for example, has an active pipeline of US$750 million in wastewater projects. Other development partners providing finance for wastewater include JICA, ADB and AFD.

6.4. Commercial finance

6.4.1 Urban water

Although there is no data on the scale of commercial finance for urban water supply, there is evidence that it is now the most prominent source of finance for the sector. Public fund allocation to the sector is limited and most WSCs are equitized, which has brought capital to WSCs. Commercial finance for water is in the form of equity finance, bond issuance or commercial loans. In Soc Trang, Soctrangwaco was able to raise VND 61 billion (US$2.4 million) from a commercial bank.

Local commercial banks are also involved in larger water supply transactions. A recent example is the construction of the Hoang Long water treatment plant (with a capacity of 40,000 m^3/day) and an associated water distribution network located in Gia Vien district (Ninh Binh). With a total investment cost of VND 640.5 billion (US$26 million), the project is intended to supply water in 15 communes in Ninh Binh. The main project investor is Hoang Dan Construction and Investment Co. Ltd. Financing for the project has been raised from equity (30 per cent) and commercial lending from BIDV bank of Viet Nam (70 per cent). Construction was planned from 2017 to 2021.

However, not all WSCs can afford commercial finance. In Dien Bien, for example, the WSC cannot afford any loans, as it barely generates enough surplus to cover depreciation costs.

6.4.2 Rural water

There are instances of utilities operating in rural areas that access commercial finance for investments. However, these tend to be utilities operating in more densely populated areas. None of

the utilities operating in rural Soc Trang and Dien Bien were accessing commercial finance to carry out investments.

6.4.3 Urban sanitation, rural sanitation and hygiene

Commercial finance in these sub-sectors is limited or non-existent.

6.5. WASH in schools and healthcare facilities

WASH in state-owned schools and healthcare facilities is mostly funded through public funds, including concessional finance from development partners. The Government of Viet Nam is leading the implementation of multiple projects funded by development partners in which the MoET and the MoH are project implementers. While the present study could not estimate the funding gap for WASH in schools and healthcare facilities, investment needs indicate that central government resource mobilization efforts should be sustained.

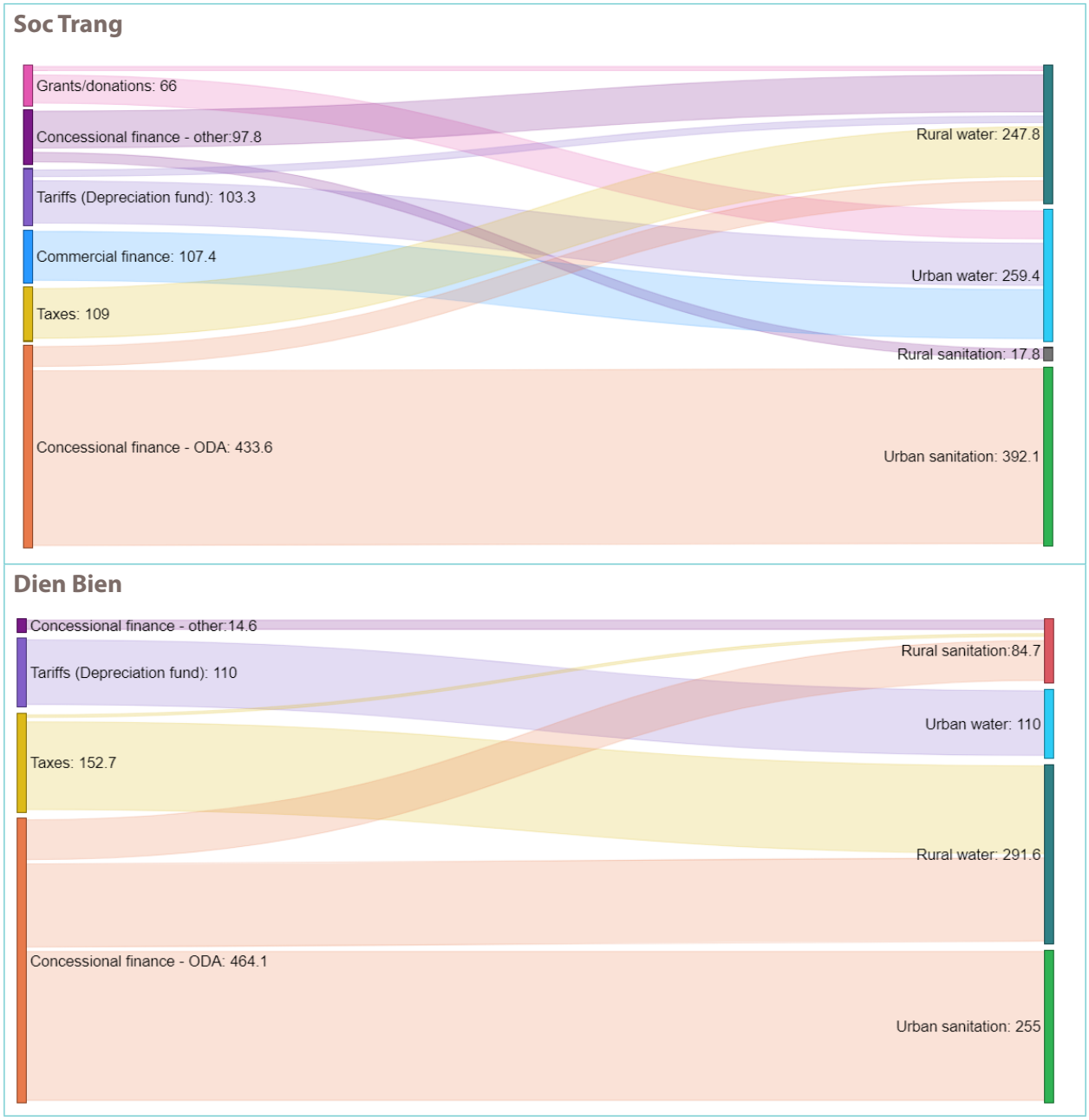
However, PPCs' contribution to funding WASH in schools and healthcare facilities is very limited. As a result, there is limited ownership at local level of issues related WASH in these institutions, which increases risks of WASH services failures.

Socialization for WASH, including calling support from private sector, community, parents etc. is also another important channel to increase funding for WASH in schools and health stations that MoET has initiated successfully through the 'Wish for You' programme since 2021. This programme aims to introduce, spread and call for resources to support educational development in disadvantaged areas, remote areas and ethnic minority areas, including building/upgrading WASH facilities in schools.

6.6. Overall picture of WASH sector funding and financing

Based on the above assessment, an overall picture of WASH funding and financing in Dien Bien and Soc Trang can be drawn (Figure 11). Key features of this funding and financing picture are presented below.

Figure 11: Sources of funds and finance for WASH in Soc Trang and Dien Bien (2016-2020) in VND billion

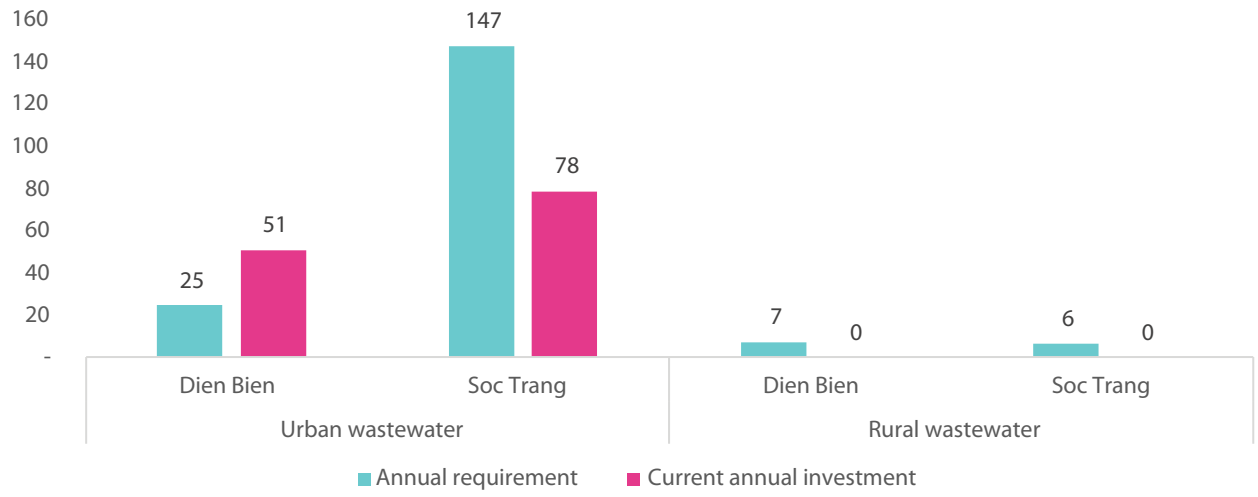


Sources: Authors based on data from provinces departments

1. **Urban water is increasingly funded via tariffs (depreciation funds) and commercial finance, which is a positive indication of financial sustainability**; this is the case both in Dien Bien and Soc Trang (Figure 11). However, going forward, investments are required (i) to mobilize water resources (e.g., construction of dams and reservoirs) in order to maintain current service levels in the face of decreasing water resources; and (ii) to extend piped water to those who are excluded from services (as presented in section 3.1, over 15 per cent of the urban population have no access to piped water supplies); **the challenge for the Government of Viet Nam is to provide incentives to WSCs to extend water services to this population.**

2. **The bulk of ODA is allocated to wastewater services development**; this is particularly the case in Soc Trang and is a positive trend considering the large investment need. However, current investment levels are not sufficient to meet government objectives related to wastewater in Soc Trang and Dien Bien. Although current levels of investments in wastewater in Dien Bien, if maintained, could help meet government objectives in urban areas, investments are totally lacking in rural wastewater. In Soc Trang, the investment shortfall concerns both urban and rural wastewater. Considering that wastewater investments are mostly reliant on ODA projects, there is a lack of predictability on the availability of funds for wastewater in the future. **Securing investments in wastewater requires unlocking additional finance, including from locally generated funds**.

Figure 12: Min. annual investment requirements vs. actual annual investment in wastewater (VND billion)



3. **Investments in rural water services have been dependent on taxes and ODA in many provinces**; however, ODA projects for rural water (and sanitation) are winding down while access to piped water in rural areas is only 34.8 per cent. At the same time, allocation from the new rural NTP barely, if at all, surpasses 1 per cent of the total NTP budget. The **Government of Viet Nam should therefore take measures to incentivize allocations to the rural water sub-sector from taxes (government funding) and/or make available alternative forms of concessional (non-ODA) finance** in order to meet the minimum of VND 13.48 thousand billion (US$ 593 million) required to achieve government objectives.

4. **Alternative concessional finance is emerging and is being used for rural water investments**: this is the case where rural water operators have good technical and financial performance, as in Soc Trang. As a result, the PCERWASS is able to benefit from a loan from the PPC and to match donations/grants via the depreciation fund. Other rural water utilities could benefit from these types of instruments if they meet operational and financial requirements. **A key area of intervention for the Government of Viet Nam is to build capacity of rural water utilities towards greater access**

to alternative finance. This would imply, for example, the development of technical assistance projects and programmes that can help rural water utilities deliver services at optimum costs and maximizing revenue potential from the sales of water.

5. **Some provinces are not ready for commercial finance (private investments) in any sub-sectors**: this is the case of Dien Bien, where water services expansion and sustainability are challenged by poverty rates, entrenched behaviours (that limit willingness to pay) and low population density. In these contexts, revenues from tariffs are very low and not sufficient to cover basic operations and maintenance costs. **Government action is required over the medium to long-term to engage populations on the benefits of piped water (as opposed to alternative sources) and to cover operational costs where necessary to protect investments**.

6. The Central Government is mobilizing funds and implementing projects related to WASH in schools and healthcare facilities, with limited involvement from PPCs: The Central Government mobilizes funding for WASH in schools and healthcare with support from development partners (World Bank and ADB, among others) in which central government agencies are project implementers. This approach is effective in accelerating the pace of WASH services coverage in these institutions. However, there is room for greater involvement of PPCs to ensure greater ownership at local level of WASH in schools and healthcare facilities, which can help ensure better prioritization (based on knowledge of critical gaps in provinces) and greater ownership of operation, maintenance and renewal of WASH infrastructure.

7. There are huge unmet investment needs for rural sanitation: although the picture is not complete due to lack of data on household investments, current access figures indicate that many households are reluctant to invest in or unable to afford hygienic latrines. Based on figures from VBSP, current annual household investment in rural sanitation hygienic facilities is VND 16.9 billion. However, considering the access gap in Dien Bien (over 50 per cent of the population lacking access to hygienic facilities), the annual investment requirement amounts to VND 187 billion (US$8.1 million) or more than 10 times current investment levels. The Government needs to set-up mechanisms to incentivize and support households' investments in hygienic sanitation facilities, with national funding allocated to communication and behaviour change.

7. Preliminary recommendations for a funding and financing strategy

In light of the above assessment, the following recommendations are formulated as strategic orientations for WASH sector funding and financing going forward:

1. Investigate the most effective method to channel alternative concessional funding repayable to WASH, with water supply services as the main entry point in initial stages; as part of this investigation, the Government will consider in particular three options:
    a. Set up a dedicated fund for investments in water supply;
    b. Reinitiate VDB's capacity for lending to the water sector; and
    c. Expand VBSP's lending mandate to include water companies.
2. Mobilize additional funding for the water sector from the sector itself: introduce regulations and mechanisms to ensure all proceeds from water abstraction fees and polluter-payer fees are used exclusively for water sector investments.
3. Improve investment efficiencies in wastewater.
4. Develop well-targeted central government programmes for sanitation and rural water supply in difficult areas.
5. Scale up VBSP operations for scattered populated households.
6. Prepare WASH sector for climate finance.

These recommendations are detailed below.

7.1. Investigate effective channels for facilitating access to alternative concessional finance

Alternative concessional repayable finance refers to non-traditional ODA finance and alternatives to purely commercial finance (provided by commercial banks or private investors looking for commercial-like returns). In Viet Nam, the VBSP and VDP present two existing models and channels of alternative concessional finance. In these models, government funding is used to provide lending capital which can then be deployed at more affordable lending rates or towards priority sectors in line with government policy. Going forward, both these models should be explored to assess whether they provide adequate structures for channelling finance to meet government objectives for WASH.

In addition to these two existing structures, the Government should investigate the setting-up of a dedicated, independently managed, blended finance facility, which will bring together funds from investors with different risk appetites.

The rationale for those three options is presented below. Further studies and consultations are required to assess the feasibility of each option in the context of Viet Nam, the benefits of each solution and the timeframe in which it could be implemented.

7.1.1 Set up a dedicated fund for investments in water supply services

It is recommended that government agencies investigate the setting-up of a dedicated blended finance facility (the Fund) for water supply.

Rationale and overview

The **rationale** for the establishment of such a fund is driven by the following factors:

- Demand for investments within the urban and rural water sub-sectors;
- Reducing supply of central government funding for the sector;
- Increasing volumes of private commercial financing;
- Limited access to commercial finance due to: absence of tailored lending products from the finance sector; limited availability of long-term debt capital; and high collateral requirements, posing a particular challenge for smaller enterprises;
- Increasing interest of investors in piped water supply services;[13] and
- Increasing interest of investors in blended finance structures.

In addition, blended finance may have the potential to increase the focus and requirements for WASH enterprises to be climate resilient through the provision of targeted incentives. Such incentives include conditional lending (where lending is provided to WASH enterprises that set climate-related targets) and reduced interest rates (where WASH business planning takes climate resilience into account).

It is proposed that piped water supply services are chosen for funds deployment during the initial stages of fund operations. Gradually, funds deployment can be expanded to sanitation enterprises and wastewater treatment projects, or to companies engaged in such services. The rationale for this priority is based on the unmet demand for water supply financing, together with a more profound supply of investment capital for such services relative to sanitation services.

For more information about best practices in blended finance and examples of blended funds in other

13 Vietnam Water Supply Portfolio InfraCo - https://infracoasia.com/our-portfolio/vietnam-water-supply-portfolio/

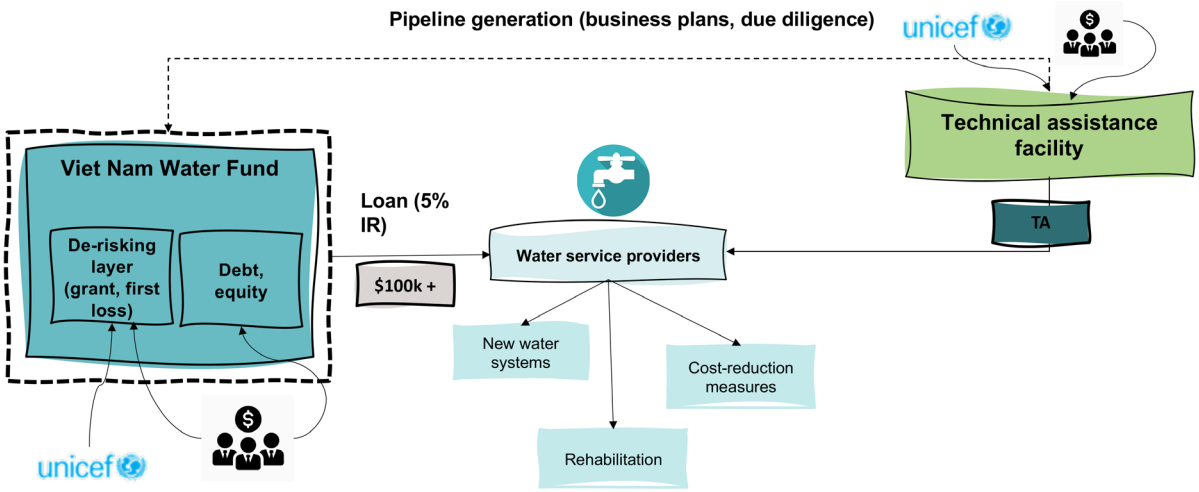
countries, please refer to Annex 6.

It is recommended that the Fund is implemented under a wider blended finance approach that will combine:

- A ***blended finance facility***: an investment fund, 'The Fund', operating on concessional terms; and
- An ***enabling facility*** which offers a range of technical assistance and grants to support the development of a climate-resilient and financially resilient water sector.

Figure 13 summarizes capital flows of the Fund and its enabling facility. Further detailed on potential Fund design are provided below.

Figure 13: Overview of the water Fund and enabling facility potential financial flows



Fund structure

It is proposed that the Fund is a structured fund (a type of blended finance facility), combining financial resources from different investors into a pool. Capital for the Fund will be a mix of different asset classes in a waterfall structure, each with distinct risks and returns. Investors with greatest tolerance to risk and low return expectations will invest in the riskiest, junior tranche, or Class C shares, which are tapped first if the Fund experiences financial losses. Next level investors will invest in the mezzanine tranche, or Class B shares, which are drawn on second. Class A shares (the senior tranche) are the least risky because they are protected from losses by the Class C and Class B shares. Class A shares are first to receive dividends and last to be drawn on to cover potential losses.

By offering different asset classes, the Fund will cater to both development objectives of public donors and development finance institutions, and to the investment objectives of private investors. Private investors benefit from the reduced risk that the waterfall structure provides, enabling them to invest in sectors and regions with high development potential and higher perceived risk. Publicly funded donor agencies benefit from the continuous use of their funds for sustainable development (with the choice to exit).

In addition to offering various asset classes, the Fund may utilise the following financial instruments to mobilize private capital and to further de-risk investments:

- Provide a **grant** for structuring the fund and/or initial capital to attract private, institutional and commercial investors;
- Provide **first loss** capital or a **guarantee** (including limited credit guarantees) to catalyse private investments; and
- Buy debt – use a **grant** to partially repay a loan, contingent on achieving water services objectives.

The present study has already identified a potential pipeline of investees in the rural water sub-sector.

Table 8: Potential borrowers in the rural water sub-sector

	PCERWASS	Rural population	Piped water coverage (%)	Immediate investment needs (VND million)
1	Cần Thơ	133,717	68,5	3,422.46
2	Hậu Giang	144,395	37,1	3,480.38
3	Sóc Trăng	282,147	56,9	14,990.47
4	Vĩnh Long	224,488	94,0	2,874.34
5	Trà Vinh	253,461	75,3	11,040.76

Source: NCERWASS

The investments provided by the structured Fund will be accompanied by an **enabling facility**, which will use a range of financial instruments and can be used by partners to:

- give **grant** money for prototyping innovative or emerging models and solutions (including trials of new technologies, hardware or business models) with the potential for substantial impact;
- provide **technical assistance (TA)** to facilitate and cultivate an environment between WASH enterprises and potential funding sources that improves access to finance and investability of WASH by improving efficiencies and strengthening capacities and skills;
- provide **output-based payments (results-based)** to incentivize achievement of output milestones by enterprises or by an intermediary (particularly suitable to initiatives that integrate social inclusion subsidies);
- provide **outcome funding** by paying for achievement of WASH milestones through a grant;
- provide **subsidies** for the poorest to increase WASH product and/or service affordability (boost demand among marginalized groups);
- provide **subsidies** to utilities to incentivize piped water network expansion in less economically attractive communities;
- provide **viability gap funding** to water service providers or other WASH businesses (International WaterCentre & Lean Finance, 2021).

It is proposed that the Fund is managed by a non-government, independent fund manager, who will determine the best domicile for the umbrella vehicle. The Fund Manager will be implementing the Fund's investment strategy and managing its trading activities. The independence of the fund manager will

provide assurance to secure private sector participation in the arrangement, which leads to improved investment performance and autonomy in decision making so that financial and development impact outcomes are in the best interests of the investors.

7.1.2 Reinitiate VDB's capacity for lending to the water sector

Apart from the management of some ODA projects, which may have water components, VDB is not at present a major actor in financing water and sanitation investments. One limitation faced by VDB is the lack of regulations related to setting-up interest rates for water and sanitation loans.

The Government of Viet Nam should consider mechanisms to accelerate and facilitate VDB's involvement in the sector. As a national development bank, VDB can play an active role providing finance to SMEs that want to invest in water and wastewater – or even providing larger investments. In order to play this active role, VDB should develop its own water and sanitation portfolio – allocating lending capital and developing a strategy for loan disbursement, including engagement with WSCs. This role for VDB can be one outcome of the national dialogue recommended in section 7.3.

In other countries, such as France, the Netherlands and Italy, national development banks continue to be a key source of finance for the water sector (Box 4).

Box 4: Two national development banks in the water sector: CDP (Italy) and NWB (Netherlands)

Cassa Depositi e Prestiti (CDP), Italy. CDP was established in 1850 with the main purpose of mobilizing private savings managed by the State for financing public works. As of 2021, the Bank was 17 per cent owned by the private sector and the remainder by the Italian Government. Since its creation, CDP has played a major role in financing local development, especially through the provision of debt to municipalities. Compared with other institutions, CDP offered municipalities better interest rates, time-spread drawing more suitable to the nature of works, and long tenures (up to 50 years). As a result, CDP has been a key financial partner for Italian municipalities looking to expand basic infrastructure, including water and sanitation services. For example, in Milan, the archives of the city indicate the involvement of CDP dating as far back as 1906, when CDP provided 35- to 50-year loans to the city of Milan for multiple sectors, including water. At that time, the Italian central Government did not provide transfers to municipalities, which therefore had to finance infrastructure development from their own resources (local tax primarily) and from repayable finance. CDP also provided short-term debt to the municipality to cover interest rate payments from loans contracted with commercial banks.

Nederlandse Waterschapsbank (NWB), Netherlands. The NWB Bank was officially established in 1954 with a mandate to provide the Dutch Water Authorities (DWAs) with funding for investments at the lowest possible cost. In its first five years, the Bank issued 323 long-term and 919 short-term loans. The Bank was capitalized mainly through private loans provided by institutional investors and banks, allowing the DWAs to attract resources on relatively favourable terms. By 2021, 81 per cent of the Bank was owned by the DWAs, 17 per cent by the Dutch state and 2 per cent by the provinces. The Bank provides the DWAs with: i) long-term loans; ii) financial services; iii) a central treasury function; iv) centralized financial expertise; and v) low interest rates. Today, the Bank does not focus only on the water sector: 63 per cent of its investments are in social housing and 14 per cent in water authorities. In 2006, the NWB Bank established the NWB Fund to provide financial support for water management projects in developing countries.

Source: (Fonseca, Mansour, Smits, & Marciela, 2021)

7.1.3 Expand VBSP's lending mandate to include water companies

There is a rationale for exploring the feasibility of expanding VBSP's lending mandate to include lending to water service providers (not just households). VBSP is already an existing key actor in funding rural water and sanitation, with dedicated credit lines and a wide presence throughout the country.

As part of future investigations, the Government should seek to understand:

- Whether expansion would be in line with VBSP's legal mandate and how to address any such limitations;
- What could be the sources of capital for VBSP to expand to water service providers lending;
- What capacity enhancement would be required for VBSP to expand the scope of its operations in water (particularly in terms of loan appraisal); and
- What would be the key features of VBSP's lending products for water service providers (e.g., amount, tenure, enterprise eligibility, etc.).

Action point: commission a detailed feasibility study on alternative repayable concessional finance with attention to three channels in particular: VDB, VBSP and a dedicated blended finance facility.

7.2. Mobilize additional funding for the water sector from the sector itself

Viet Nam has a well-developed system for water abstraction licensing. Some PPC departments are also able to collect environmental fees related to water pollution. However, under existing arrangements, all funds collected from water and wastewater services are not systematically used for water sector investments.

It is recommended that all fees from the water sector are retained for investments in the sector, including for water supply and wastewater, in line with a basic principle of IWRM. Other countries have set up dedicated river basin agencies that collect these fees, which are then used to channel grants or concessional finance to water companies to carry out investments that will help them meet government objectives. This is the case in France (Box 5).

Box 5: Using proceeds of water abstraction and pollution charges to meet sector requirements: French Water Agencies

In France, water abstraction and pollution charges are levied by water agencies and the revenues from these levies are spent solely on investments in the water sector. Six water agencies were established as part of the country's water legislation, which encompassed two fundamental concepts: (i) Integrated Water Resources Management and (ii) the polluter-pays / consumer-pays paradigm. Each agency collects water fees, a tax paid by all users (with some exemptions) based on their water abstraction and pollution. The fees are defined by law and established by the Board of Directors of each water agency in cooperation with the Basin Committees. Rates vary based on the charge type and geographic location. The fees are premised on 'user pays': each user pays an amount proportional to their consumption (user-payer) and/or water pollution (polluter-payer). In 2017, French water agencies collected a total of EUR 166.355 million (VND 4.1 thousand billion) from all water users, including EUR 135.1 million from water bills. All fees are reinvested to offer financial aid (grants and loans) to public and private organizations, with the purpose of water sector development. Agencies finance the upgrade of wastewater treatment plants, the expansion of freshwater protection perimeters, the development of water networks, the reduction of water leakage, the protection of drinking water from contamination, the restoration of rivers and the protection of aquatic biodiversity. In 2016, water agencies expanded their mandate to encompass marine and terrestrial biodiversity conservation and preservation. While the fundamental idea of these organizations was originally 'water pays for water', this development led to a reinterpretation of taxes and assistance to allow for a broader scope of activity: 'water and biodiversity pay for water and biodiversity'.

Source: (Guettier, Fernando, & Orban, 2019)

In the context of Viet Nam, which does not have cross-provincial agencies, funds can be managed by a designated department within PPCs. The DPI would then be in charge of prioritizing investment areas within the water sector, depending on provincial plans and central government objectives.

Action point: commission a study on the optimum institutional and organizational set-up to collect and channel revenues from abstraction charges and polluter-payer fees. Such a study will consider institutional options to be developed at national level, provincial level and inter-provincial level.

It is also recommended that the Government explore the feasibility of cross-subsidies between urban water and rural water services. Many urban areas can generate tariff revenues beyond operating costs. Urban residents are also generally in a better position to pay higher tariffs compared with rural areas. A surcharge of on the water bill (e.g., VND 500/m^3) could be introduced of WSCs customers, which could then be transferred to PPCs to cover the costs of rural water provision.

Action point: Consult WSCs and PPCs on the feasibility of a surcharge of the water bill to cover the costs of rural water supply.

7.3. Incentivize PPCs to fully implement tariff policies

MoF Circular 44/2021/BTC provides clear guidance on water tariffs, which are yet to be fully implemented by PPCs. Another important guidance from the Circular, which is not implemented in all provinces, is the need to subsidize water services where tariffs are not full cost-recovery (Article 11 of the Circular). On the other hand, the assessment found most WSCs and PCERWASS operating water systems have a progressive tariff policy, where those who consume the least (potentially the poorest), also pay the least per m^3.

Additionally, few PPCs are implementing Prime Minister Decree 80/2014/ND-CP on wastewater tariffs. Many still charge an environmental fee, rather than a wastewater tariff on the water that is consumed. PPCs should be incentivized to implement the national regulation.

Action point: MARD and MoC to support poor provinces that still rely on central government budget allocations to make water and wastewater tariffs that includes subsidies, if required, with a roadmap to gradually phase out subsidies on water and wastewater tariffs from now until 2030 to submit to the Prime Minister for approval and implementation.

7.4. Improve PSP conditions in the water and wastewater sector

Conditions for PSP need to be improved so that private investments can be mobilized to deliver government objectives. The study found that equitization is not in place in all provinces and for all types of water services. Rural water supply in particular has limited PSP, including in the form of equitization; but some urban WSCs (like in Dien Bien) are also not attractive for private investors.

One essential condition to improve is access to investment capital. For private investors to invest in areas that are potentially less attractive than others (rural areas for example), they need access to capital. Commercial banks are not particularly interested in these investments and interest rates and tenures are a deterrent for private investors. In line with Recommendation 7.1. the Government should play an active role in facilitating access to affordable finance, including for the private sector. Making available financing instruments for these investments may act as an incentive for private investors to consider the water sector.

Another important condition is cost-recovery of water services. Some areas are not of interest to the private sector because cost recovery is a challenge (due to low tariffs and low consumption) and there are limited opportunities to make interesting returns on investments. Attracting the private sector to these areas would require PPCs to supplement revenues from tariffs with subsidies (government transfers) from their budgets, if tariffs cannot be increased due to socio-economic conditions, as they do with wastewater services in urban areas.

However, any transfer of funds between PPCs and water companies (urban or rural) must come with conditions on the use of funds. This is why licenses or contracts should clearly stipulate geographical areas to reach, coverage rates and service level standards. Water licenses do not, however, currently include clear performance indicators.

Finally, although a PPP law was passed, which could be applied to the water sector, there are still no or very few experiences with PPP in practice. The sector should continue to explore how to make use of the PPP framework, in conjunction with efforts to facilitate access to finance. PPPs provide

a solid framework for both the private and the public sector as a PPP contract can set all the terms on the investment as well as expected public sector contribution (for example, a subsidy where tariffs are not sufficient). It is therefore recommended that the Government continues to explore the possibility of piloting PPP arrangements in certain provinces.

Action point: Work on identifying sources of finance for the private sector (including via a possible water fund or any other suitable vehicle) while continuing to support PPCs in entering into PPP agreements for water investments. MoC and MARD to issue a Circular on procedure for engaging private sector in PPP contracts in WASH sector with template contract documents, including performance indicators as part of contracts.

7.5. Improve investment efficiencies in wastewater

Inadequate wastewater treatment facilities throughout the country warrant government attention and budget allocation to the sub-sector for class II and upper-class cities; however, investments carried can be further optimized. A diagnostic carried out in 2013, and still valid today, pointed out the following inefficiencies, among others:

· Projects focus on centralized WWTP construction, with limited attention to collection systems and household connections: as a result, most constructed WWTPs still function far below design capacity many years after being put into operation; and

· Technology choice: most WWTPs are connected to combined sewerage (domestic wastewater and rainwater) treatment facilities, with pre-treatment from households' septic tanks, leading to low concentrations of influent BOD; yet WWTPs operate based on conventionally activated sludge treatment. Given the low organic loading at these treatment facilities, appropriate and lower cost technologies can be adopted which would allow for upgrading as the influent strength increases over time (World Bank, 2013).

In order to improve wastewater project efficiency, PPCs should carry out strategic planning for sanitation and wastewater (World Bank, 2013)**.** Such an approach would identify the social, technical, institutional and economic conditions for a specific area so as to determine the most appropriate response for improving wastewater management in terms of applied technology (particularly centralized/decentralized systems), building demand for household connections and optimizing overall systems design. Optimizing design by adapting to local realities can help reduce capital costs and free up resources for lower class cities (class III, class IV and class V) that also require wastewater investments.

All WASH sub-sectors can benefit from investment efficiencies, but wastewater is highlighted here as it is consuming the largest part of public funding.

Action point: Develop and issue a Circular that will guide provinces in planning and implementing investment projects in wastewater for more effective design.

7.6. Introduce incentives for WSCs to meet government objectives on water

The Government should implement strategies to incentivize WSCs' investments in areas that can help meet government objectives and standards for water and sanitation services. Such strategies should be identified in consultation with WSCs and can include financial incentives as well as performance targets to be agreed between PPCs and WSCs.

In order to identify these strategies, it is recommended, first, that government agencies organize a national forum or dialogue on water supply finance, with a focus on urban areas and how to reach the last 15 per cent who are not connected to WSC systems. As part of this event, which could also be multiple regional events, the national Government will convene all relevant parties, including PPCs, WSCs, local banks, other financial institutions and financiers, to:

- Communicate on government strategy for urban water supplies; and
- Identify potential financing mechanisms suitable for these investments, including financial incentives.

In France, following such a national event, the Treasury allocated EUR 2 billion to support water companies with soft loans for water supply investments (Box 6).

Box 6: French national water consultations – 'Assises de l'eau'

In 2018-2019, the French Government organized national consultations on the state of the water sector and its financing in particular. Consultations were led by the national development bank *Caisse des Dépôts*. Consultations involved local authorities and service providers, as well as financial institutions, and aimed to address the emerging issue of water quality and availability in the context of climate change.

A first phase, carried out from April to August 2018, dealt with public water and sanitation services. It resulted in new measures to strengthen the sustainability of water sector investments focused on water leakage reduction, especially in small towns, improving water services' quality and enhancing customers' trust in public utilities.

A second phase, from November 2018 to July 2019, focused on water resource management, particularly management of water catchment, water sharing and preservation, and aquatic ecosystems' protection. Following on from the *Assises de l'eau*, the French Government committed to provide EUR 2 billion for water sector investments to be allocated via *Caisse des Dépôts*.

Source: (Fonseca, Mansour, Smits, & Marciela, 2021)

In addition to financial support and mechanisms, the Government of Viet Nam should look into regulatory incentives to grow investments in less profitable areas. As part of these regulatory incentives, the Government should consider making it mandatory for all WSCs to publish:

- Water supply business plans, with clear performance targets in terms of coverage rates and other service levels and investments plans (include to less 'profitable' areas); and
- Annual results related to business plan implementation.

In addition, relevant government agencies should consider a careful review of performance agreements between PPCs and WSCs to ensure that (i) they are in place and (ii) they provide performance objectives, including coverage rates. Such a review will consider whether licensing of water distribution should include conditions such as serving designated poor or less densely populated areas.

Action point: organize national consultations on the state of urban water supplies, funding requirements and approaches to facilitate and incentivize investments. The outcome of these consultations will be a joint roadmap between the Government and WSCs, with key responsibilities of each actor, including PPCs, detailed.

7.7. Develop a central government programme for sanitation and water in mountainous and hard to reach areas

This study has highlighted the specific needs of certain provinces, for which commercial or alternative concessional finance (non-ODA) is not appropriate as a source of funds. In these provinces, as in Dien Bien, water and sanitation services still require central government funding. In addition, financial resources are required for behaviour change and communications activities, which are 'soft' investments that do not qualify for ODA finance any longer. Further, although restricted in scope the present exercise has highlighted that a very small fraction of the rural NTP funding is allocated to water and sanitation.

In this context, it is recommended that a dedicated government programme is launched with the specific purpose of developing WASH services in geographically difficult and poorer provinces. This programme could be led by NCERWASS and should include the following activities:

- Channelling Capex for infrastructure based on priority criteria (socio-economic context of the provinces, access gaps);
- Funding the development of sanitation markets to make affordable toilet facilities available;
- Channelling funds for behaviour change and communications; and
- Channelling funds for capacity building of rural water service providers (PCERWASS) in order to improve organizational capacity. As part of these activities, NCERWASS can promote peer-to-peer learning between PCERWASS centres so that well-performing utilities help build then capacity of lesser performing ones.

As of 2021, MARD has decision on proposal investment plan on water storage and domestic water supply system in areas with polluted water sources, water scarcity areas, areas affected by saltwater intrusion**. It is recommended that the proposal is extended geographically (to include more provinces like Dien Bien) and that it includes significant budgets for soft components which are critical for services expansion and sustainability**.

Action point:

1. **NCERWASS to accelerate the implementation of the two investment projects (i) for three northern mountain provinces (Cao Bang, Ha Giang and Lai Chau) and (ii) for seven provinces of Mekong Delta (Dong Thap, Ben Tre, Tra Vinh, Soc Trang, Bac Lieu, Ca Mau and Kien Giang).**
2. **MARD to continue to facilitate the approval and initiation of the water and dam security and reservoir safety project, period 2021-2030, vision to 2045. This project should include soft components related to hygiene and clean water promotion.**

7.8. Mobilize funding for WASH in schools and healthcare facilities, including from local provincial governments

The central Government should continue and accelerate public funding mobilization for WASH in schools and in healthcare facilities, including in the context of projects supported by development partners. At the same time, the central Government should allow increased ownership by PPCs of WASH in schools and healthcare facilities. The Government should lead the design of projects in which PPCs become 'project owners' so as to ensure stronger involvement in funding the infrastructure and in its maintenance and renewal (where necessary). Such projects would also incentivize PPCs to budget and fund WASH in these institutions.

> **Action point: MoET and MoH to continue to identify funding opportunities to accelerate coverage and to design projects allowing greater ownership of PPCs of school and healthcare facilities.** Socialization for WASH is also another important channel to increase funding for WASH in schools and health stations that MoET has initiated successfully through the 'Wish for You' programme since 2021 that aims to introduce, spread and call for resources to support educational development in disadvantaged areas, remote areas and ethnic minority areas including building/upgrading WASH facilities in schools.

7.9. Scale up VBSP operations in water and sanitation

Lending capital for VBSP's activities related to household lending for water and sanitation should be increased. Consultations with head office and branch managers indicated that demand for water and sanitation loan products is very high, with well-performing portfolios. **Considering investment needs in sanitation and rural water (especially for household treatment), VBSP's involvement should be scaled up.**

It is also recommended that VBSP's operations are supported by government-funded behaviour change and communications campaigns, especially for harder-to-reach communities. VBSP can also be the key implementer of a forthcoming government programme (as detailed in 7.5).

Another recommendation is for VBSP to be able to increase the lending amount up to VND 25 million to allow larger investments. With lending currently set at VND 10 million for each type of water and sanitation investment, the envelope is unlikely to be sufficient for all households. For example, a toilet with a septic tank costs about VND 15 million.

Finally, VBSP should be able to offer more affordable financial products to low-income households. VBSP should consider applying the same interest for these populations as other programmes for the poor and near poor so that they can also benefit from access to finance for WASH, in line with the Resolution 'Tam Nong' (on the development of Agriculture, Farmers and Rural Areas).

> **Action point: MARD to engage with VBSP to develop a lending programme for submission to the MoF. As part of this lending programme, specific provinces will be selected for DWR to engage with the DARD and DoH of these provinces on the programme and their roles in facilitating the uptake of water and sanitation lending products among households.**

7.10. Prepare the WASH sector for climate finance

Viet Nam's NDCs to the Paris Agreement recognize water resources as the number one impact of climate change in the country. This impact is recognized in terms of damages to infrastructure (headworks and networks) and decreasing water resources, all leading to limitations in access to water. In provinces visited (Dien Bien and Soc Trang), these impacts are being felt. As recognized in the NDC, it is the poor and populations from ethnic minorities and mountainous areas who are the most vulnerable because of their limited capacity to cope.

This context of WASH services provides a strong case for Viet Nam to access climate finance for investments in water supplies and sanitation. Global funds like the Green Climate Fund have been set up to support countries in their adaptation and resilience improvement efforts. Funds can be provided in the form of grants and soft loans. Development partners should actively seek to support Viet Nam water and sanitation agencies in putting together a proposal to the GCF.

Action point: UNICEF and other development partners to identify funding opportunities from existing climate finance facilities and support nationally designated entities in the preparation of proposals to increase the climate resilience of WASH infrastructure.

Annex 1: List of government institutions and donor agencies consulted

Government institutions consulted

- National Center for Rural Water and Sanitation Services (NCERWAS, Ministry of Agriculture and Rural Development, MARD)
- Viet Nam Development Bank
- National Accounts and Finance Department (General Statistics Office)
- Department of Environmental and Social Statistics (General Statistics Office)
- Department of Finance (MARD)
- Office for coordinating NTP on new rural development (MARD)
- Department of Planning (MARD)
- Water Resources Management Department (MARD)
- Technical Infrastructure Agency (Ministry of Construction, MoC)
- Department of Physical Education (Ministry of Education and Training)
- Department of Debt and External Finance Management (Ministry of Finance)
- Department of Planning and Finance (Ministry of Health)
- Agricultural Economics Department (Ministry of Planning and Investment, MPI)
- External Economics Relations Department (MPI)
- Department of Local Governance (MPI)
- Vietnam Bank for Social Policies (VBSP, Head office)

Institutions and organizations consulted in provinces

- PCERWASS
- DPI
- DOC
- DARD
- DOF
- VBSP (provincial branches)
- Urban water companies
- URENCO
- CDC (DOH)

- Commune People Committee in Quai To
- Commune People Committee in Pu Nhung
- Development partner agencies consulted
- World Bank
- Asian Development Bank
- JICA
- Koica
- Agence Française de Développement
- VEI

Private investors/Philanthropists

- Water Solutions South-East Asia Co. ltd. (Frank Pogade)
- Manila Water (Virgilio (Perry) Rivera, Jr., Advisor)
- Community Fund for Disaster Prevention

Annex 2: Bibliography

International WaterCentre & Lean Finance. (2021). *Methodology for country-level diagnostic assessment of opportunities for DFAT to catalyse blending of finance for climate resilient WASH, November 2021*.

UNICEF. (2021). *Multiple Indicator Cluster Surveys* .

World Bank. (2022). *Taking Stock January 2022. No Time to Waste. The Challenges and Opportunities of Cleaner Trade for Vietnam.*

Government of Vietnam and the World Bank. (2017). *Vietnam Public Expenditure Review. Fiscal Policies towards Sustainability, Efficiency and Equity.* The World Bank.

Government of Viet Nam. (2020). *Updated Nationally Determined Contributions.*

World Bank. (2013). *Vietnam Urban Wastewater Review.*

Fonseca, C., Mansour, G., Smits, S., & Marciela, R. (2021). *The role of National Public Development Banks in financing the water and sanitation SDG 6, the water related goals of the Paris Agreement and biodiversity protection.* AFD.

Guettier, P., Fernando, J., & Orban, J. (2019). *The french policy approach for the management of water resources and aquatic biodiversity.* French Water Partnership.

Annex 3: Review of strategy and legal context

Urban water supply

Strategic objectives for urban water supply are formulated in Prime Minister Decision No. 2502/QĐ-TTg, dated December 22, 2016. According to the Decision, objectives to be achieved by 2025 are, among others:

- 100 per cent coverage of piped water supply services in all cities, with average water consumption of 120 l/c/d and water quality meeting government standards for clean water;
- 75 per cent urban water supply systems have and implement safe water supply plans;
- Non-Revenue Water (NRW) in class IV and upper-class cities is less than 18 per cent and in class V cities less than 25 per cent; and
- 24-hour water supply for cities of class IV and above.
- In order to achieve these objectives, the Decision proposes the following implementation measures:
- Development of urban water supply in combination with water supply for concentrated rural residential areas;
- Promotion of PPPs for investments;
- Development of rainwater systems and surface water storage reservoirs and works;
- Rational usage of underground water sources (with reduction of reliance on these sources);
- Promotion of inter-provincial works; and
- MoC assigned responsibility for implementation of the Decision.

Urban sanitation (wastewater collection and treatment)

Strategic objectives for urban sanitation are formulated in Prime Minister Decision No. 589/QĐ-TTg, dated April 6, 2016. According to the Decision, objectives to be achieved by 2025 are, among others:

- 50 per cent of wastewater in urban centres of class II and upper classes and 20 per cent for urban centres of class III, IV and V is collected and treated up to standards before being discharged into the environment;
- 80 per cent of wastewater from craft villages is collected and treated to meet technical standards;
- 80 per cent of urban areas covered with wastewater collection services (sewers); and
- 20-30 per cent of treated water is reused.
- In order to achieve these objectives, the Decision proposes the following implementation measures:
- Focus of investment capital on drainage/sewerage systems in big cities and river basins;
- Prioritization of investments for urgent projects to address environmental degradation;
- Promotion of PPP for investments;

- Development of a roadmap to implement the wastewater service tariff;
- MoC assigned responsibility for implementation of the Decision – *this means that the MoC is also assigned responsibility for supporting sanitation development in small towns*; and
- PPCs to develop plans for Decision implementation.

The National Strategy on green growth for the period 2021-2030, with a vision to 2050, also provides strategic objectives for the sanitation sub-sector. According to this strategy, the vision for the country is that by 2030:

- Class cities II and upper class have at least 50 per cent of domestic wastewater collected and treated, meeting national standards; and
- Class III, IV and V cities have at least 20 per cent of domestic wastewater collected and treated, meeting national standards.

The vision is that by 2050, 100 per cent of wastewater is collected and treated, meeting technical standards.

Rural water and sanitation

The national strategy on rural water supply and sanitation is provided by Decision 1978 of the Prime Minister, issued on November 24, 2021. The Decision provides specific sub-sector targets for 2030, as follows:

- 65 per cent of the rural population have access to clean water of standard quality with a minimum quantity of 60 lpd;
- 100 per cent of rural households, schools and healthcare facilities have hygienic latrines that meet standards and regulations;
- 100 per cent of rural people regularly practice personal hygiene;
- 25 per cent of concentrated rural residential areas have access to domestic wastewater collection services; and
- 15 per cent of domestic wastewater treated.
- The Decision also puts forward a number of implementation measures, including:
- Policies to support investments in difficult, remote and mountainous areas;
- Financial support to poor households;
- Promotion of socialization/equitization and enterprises;
- Education and behaviour change campaigns;
- Investments in inter-communes/districts water works;
- Implementation of water self-supply in hard-to-reach areas;
- Professionalization of water systems management;
- Roadmap for rural water tariff implementation;

- Promotion of simple hygienic latrines and low-cost treatment;
- MARD assigned the responsibility for coordinating strategy implementation; and
- MoC assigned responsibility for implementing strategy on domestic wastewater collection.

Water tariff policy

Circular No. 75/2012/TTLT-BTC-BXD-BNN, dated May 15, 2012, states that:

- Water tariff for urban and rural domestic users is decided by the PPC, based on MoF Circular 44/2021/BTC, dated June 18, 2021; and
- Where tariff is not full cost-recovery, service providers are entitled to a subsidy from the PPC.

Class of urban cities	Minimum tariff (VND/m^3)	Maximum tariff (VND/m^3)
Special cities and Class I cities	3,500	18,000
Class II, III, IV and V cities	3,000	15,000
Rural areas	2,000	11,000

Wastewater tariff policy

Prime Minister Decree 80/2014/ND-CP on drainage, sewerage and wastewater treatment, issued on August 6, 2014, states that:

- Principle that the tariff is calculated based on the full cost recovery policy; and
- If PPC sets the tariff lower than the cost, then local government has to supplement costs to the service provider.

List of water supply companies to stop equitization

	Water Supply companies to stop equitization until the end of 2020 (54 companies)	Rate of state holding the shares in the companies (% authorized capital)
1	An Giang Electricity and Water Supply Company (An Giang PPC)	87,72%
2	Bà Rịa-Vũng Tàu Water Supply Company (Bà Rịa - Vũng Tàu PPC)	36,00%
3	Bắc Giang Water Supply Company (Bắc Ninh PPC)	51,00%
4	Bắc Kạn Water Supply and Drainage Company (Bắc Kạn PPC)	36,00%
5	Bến Tre Water Supply and Drainage Company (Bến Tre PPC)	64,00%
6	Bình Định Water Supply and Drainage Company (Bình Định PPC)	51,00%
7	Bình Thuận Water Supply and Drainage Company (Bình Thuận PPC)	36,00%
8	Cà Mau Water Supply Company (Cà Mau PPC)	71,49%
9	Cần Thơ Water Supply Company 2 (Cần Thơ City People's Committee)	49,00%
10	Cần Thơ Water Supply Company (Cần Thơ City People's Committee)	64,00%
11	Đà Nẵng City People's Committee (Đà Nẵng PC)	60,08%
12	Điện Biên Water Supply Company (Điện Biên PPC)	99,41%
13	Đồng Tháp Water Supply and Urban Environment (Đồng Tháp PPC)	85,06%
14	Water Supply Company (Hà Giang PPC)	36,00%
15	Sơn Tây Water Supply Company (Hà Nội PC)	95,59%
16	Hà Tĩnh Water Supply Company (Hà Tĩnh PC)	95,76%
17	Hải Dương Clean Water Supply Company (Hải Dương PC)	65,00%
18	Hải Phòng Water Supply Company (Hải Phòng PC)	80,58%
19	Hậu Giang Water Supply and Urban Environment Company (Hậu Giang PC)	46,33%
20	Hòa Bình Clean Water Supply Company (Hòa Bình PC)	40,00%
21	Khánh Hòa Water Supply and Drainage Company (Khánh Hòa PC)	51,00%
22	Lai Châu Clean Water Supply Company (Lai Châu PC)	97,91%
23	Bảo Lộc Water Supply and Drainage Company (Lâm Đồng PC)	92,30%
24	Lạng Sơn Water Supply and Drainage Company (Lạng Sơn PPC)	51,00%
25	Lào Cai Water Supply Company (Lào Cai PPC)	91,84%
26	Long An Water Supply and Drainage Company (Long An PPC)	60,00%
27	Bến Lức Water Supply, Drainage and Urban Services Company (Long An People's Committee)	87,15%
28	Vĩnh Hưng Water Supply, Drainage and Urban Services Company (Long An PPC)	90,82%

	Water Supply companies to stop equitization until the end of 2020 (54 companies)	Rate of state holding the shares in the companies (% authorized capital)
29	Kiến Tường Water Supply, Drainage and Environment Company (Long An PPC)	88,22%
30	Nam Định Water Supply Company (Nam Định PPC)	49,50%
31	Diễn Châu Water Supply Company (Nghệ An PPC)	92,17%
32	Quỳnh Lưu Water Supply Company (Nghệ An PPC)	87,52%
33	Thái Hòa Water Supply Company (Nghệ An PPC)	98,21%
34	Nghệ An Water Supply Company (Nghệ An PPC)	38,05%
35	Công ty CP nước sạch và vệ sinh nông thôn tỉnh Ninh Bình Water Supply and Rural Sanitation Company (Ninh Bình PPC)	92,88%
36	Ninh Thuận Water Supply Company (Ninh Thuận PPC)	52,06%
37	Phú Yên Water Supply Company (Phú Yên PPC)	38,39%
38	Quảng Bình Water Supply Company (Quảng Bình PPC)	51,00%
39	Quảng Ngãi Water Supply, Drainage and Construction Company (Quảng Ngãi PPC)	23,35%
40	Quảng Ninh Water Supply Company (Quảng Ninh PPC)	96,16%
41	Water Supply Company (Quảng Trị PPC)	51,00%
42	Sơn La Water Supply Company (Sơn La PPC)	20,00%
43	Tay Ninh Water Supply and Drainage Company (Tay Ninh PPC)	35,00%
44	Thái Bình Water Supply Company (Thái Bình PPC)	70,00%
45	Thái Nguyên Water Supply Company (Thái Nguyên PPC)	42,27%
46	Thanh Hóa Water Supply Company (Thanh Hóa PPC)	63,62%
47	Thừa Thiên Huế Water Supply Company (Thừa Thiên Huế PPC)	70,01%
48	Tuyên Quang Water Supply Company (Tuyen Quang PPC)	68,00%
49	Vĩnh Long Water Supply Company (Vĩnh Long PPC)	51,00%
50	Vĩnh Phúc Water Supply Company (Vĩnh Phúc PPC)	96,59%
51	Vĩnh Phúc Water Supply Company No 1 (Vĩnh Phúc PPC)	96,75%
52	Yên Bái Water Supply Company (Yên Bái PPC)	96,98%
53	Gia Lai Water Supply Company (General Corporation of State Capital Management)	46,78%
54	Bạc Liêu Water Supply Company (General Corporation of State Capital Management)	98,65%

Annex 4: Investment calculation assumptions

To calculate CAPEX costs to meet the government targets, authors used estimates from multiple sources such as:

- 2019: GSO 2019 population and Housing Census for current costs (labelled 'Actuals April 2019' population – see Viet Nam statistics on population (actual and predicted), water supply and latrine usage (2019));
- 2020, 2025 and 2030 forecasted by Danso.org (for future population forecast);
- Minister of Construction, decision 65/QD-BXD, dated Jan 20, 2021 (for unit investment costs);
- Various ministerial decisions documents to determine the government targets.

Water supply assumptions

Government objectives

Urban. Objectives and specific targets of **urban** water supply by 2025: "the coverage rate for clean water supply services from the centralized water supply systems in urban areas reaches 100 per cent, with the average water supply standard reaching 120 litres/person/day, the water quality meeting the prescribed standards" - Prime Minister Decision No. 2502/QĐ-TTg, approving the Adjustment of Orientation Development of Vietnam Urban Water Supply, dated December 22, 2016.

Rural. By 2030: 65 per cent of the rural population have access to clean water of standard quality with a minimum quantity of 60 litres/person/day – Prime Minister Decision No. 1978/QĐ-TTg, approving the National Strategy on Rural Water Supply and Sanitation to 2030, vision to 2045, dated November 24, 2021.

By 2030: 80 per cent of the rural population have access to clean water – Party Resolution of National Committee Congress No. 3, dated June 16, 2022, on Agriculture, Rural population and Rural areas to 2030, vision to 2045.

New water supply capacity to be added and existing volume of hygienic water to be upgraded to clean water for the total population by 2030.

Year	Apr. 2019 Actuals				2030 Targets					
	Total population	Population served by clean water supply	Population served by hygienic water supply	Population served by water venders	Urban: 100% population served by clean water supply Rural: 80% rural population served by clean water supply				Volume of hygienic water to be upgraded to clean water	New water supply capacity to be added
					Total population	Population needs to upgrade services from hygienic water to clean water	Population change during the period	Population needing additional water supply	M3/day	M3/day
Urban	33,122,548	27,889,185	4,537,789	695,574	47,248,046	4,537,789	14,125,498	14,821,072	**544,535**	**1,778,529**
Water consumption per person per day (l)			120							
Rural	63,086,436	21,954,080	39,618,282	1,514,074	56,915,473	23,578,299	0	0	**1,414,698**	0
Water consumption per person per day (l)			60					11,383,095		

Urban: population in need of upgrade to clean water in 2030 assumes (i) the current population supplied with hygienic water, plus (ii) new water supply to account for the urban population growth estimated to 2030, plus (iii) the population served by water vendors in 2019. Based on water consumption of 120l per day per person, new water supply capacity for clean water is estimated at 1,778,529 m^3/day and upgrading from hygienic to clean water is estimated at 544,535 m^3/day.

Rural: population in need of upgrade to clean water for rural areas was calculated based on 80 per cent of forecasted rural population minus the population already supplied with clean water. The rest of the rural population is already served by clean water. Based on water consumption of 60l per day per person, upgrade capacity from hygienic to clean water is estimated at 1,414,698 m^3/day.

Wastewater assumptions

Government objectives

Prime Minister Decision No. 589/QĐ-TTg, dated April 6, 2016, approving the adjustment to orientations for the development of urban drainage/sewerage and industrial parks to 2025, and vision to 2050:

By 2025: 50 per cent of the total wastewater volume in urban areas of class II or higher and 20 per cent for urban centres of class V or higher shall be collected and treated to meet technical standards and regulations before being discharged into the environment.

By 2050: 100 per cent of the total wastewater volume in urban areas shall be collected and treated to meet technical standards and regulations before being discharged into the environment.

By 2030: Striving for 25 per cent of populated rural residential areas to have a domestic wastewater collection system, 15 per cent of domestic wastewater to be treated – Prime Minister Decision No. 1978/QĐ-TTg, approving the National Strategy on Rural Water Supply and Sanitation to 2030, vision to 2045, dated November 24, 2021.

New wastewater treatment capacity to be added to achieve the government target by 2030

#	Year	Apr. 2019 Actuals				2025 Target				
		Population	Domestic Wastewater generated [m3/d]	Percentage of WW treated	Volume of WW treated [m3/d]	Population	Domestic Wastewater generated [m3/d]	Percentage of WW collected and treated	Volume of WW to be collected and treated [m3/d]	Required additional capacity for WW collection and treatment [m3/d]
	Special cities	8,896,500	854,064	15%	128,110	11,088,400	1,064,486	50%	532,243	404,134
	Class I cities	7,303,000	701,088	15%	105,163	9,410,400	903,398	50%	451,699	346,536
	Class II cities	3,875,900	372,086	15%	55,813	4,824,000	463,104	50%	231,552	175,739
	Sub-Total 1	**20,075,400**	**1,927,238**		**289,086**	**25,322,800**	**2,430,989**		**1,215,494**	**926,409**
	Class III cities	4,169,400	400,262	0%	0	5,324,900	511,190	20%	102,238	102,238
	Class IV cities	3,100,300	297,629	0%	0	3,982,100	382,282	20%	76,456	76,456
	Class V cities	5,777,448	554,635	0%	0	7,409,628	711,324	20%	142,265	142,265
	Sub-Total 2	**13,047,148**	**1,252,526**		**0**	**16,716,628**	**1,604,796**		**320,959**	**320,959**
	Total	**33,122,548**	**3,179,765**		**289,086**	**42,039,428**	**4,035,785**		**1,536,454**	**1,247,368**
urban						**2030 Target (urban)**				
	Special cities					13,094,200	1,257,043	60%	754,226	626,116
	Class I cities					10,807,200	1,037,491	60%	622,495	517,332
	Class II cities					5,113,100	490,858	60%	294,515	238,702
					Sub-Total 1	**29,014,500**	**2,785,392**		**1,671,235**	**1,382,149**
	Class III cities					5,735,000	550,560	40%	220,224	220,224
	Class IV cities					4,085,900	392,246	40%	156,899	156,899
	Class V cities					8,412,646	807,614	40%	323,046	323,046
					Sub-Total 2	**18,233,546**	**1,750,420**		**700,168**	**700,168**
					Total	**47,248,046**	**4,535,812**		**2,371,403**	**2,082,318**
						2030 Target (rural)				
rural		63,086,436	3,217,408	0%	0	56,915,473	2,902,689	15%	435,403	**435,403**
Water consumption to wastewater ratio (urban)				80%						
Water consumption to wastewater ratio (rural)				85%						

Household sanitation facilities in rural area – assumptions

Government objective

> By 2030: 100 per cent of rural households, schools and health stations have hygienic latrines that meet standards and regulations; 100 per cent of rural people regularly practice personal hygiene – Prime Minister Decision No. 1978/QĐ-TTg, approving the National Strategy on Rural Water Supply and Sanitation to 2030, vision to 2045, dated November 24, 2021

New household hygienic latrines to be constructed by 2030 for rural households

Year	Rural Population	Households (HH)	Average size of HH [person/HH]	Number of HH using different type of latrines					
				Hygienic latrines		Other latrine type		No latrine	
				%	HH	%	HH	%	HH
2019	63,086,436	17,338,474	3.6	83.9	14,546,980	14.2	2,462,063	1.9	329,431
2030	56,915,473	15,642,466	3.6	100	15,809,854				
Number of household hygienic latrine to be constructed by 2030					1,262,874				

Hygienic sanitation facilities for public schools to be added to achieve the government target by 2030 for rural areas

Apr. 2019*				2030**			
Total number of latrines in public schools	Percentage of school latrines meeting MoH and MoET standards	Percentage of school latrines do not meeting MoH and MoET standards	Number of latrines to be upgraded to meet MoH and MoET standards	New school children increased by population growth	New public schools to be constructed meeting population growth	Ratio latrine per public school	Number of new latrines to be constructed by 2030
270,695	69	31	82,833	1,468,296	3,027	6.22	18,827.94

** :Mr. Phạm Văn Sinh, Deputy director, Department of Facilities (MoET), presented at conference on October 14, 2020,*

*** Consultant calculation*

Estimation of the required investment costs to meet the government targets for WASH by 2030

3.1: Estimation the requitred investment costs to meet the Government Target in WASH by 2030

Assumtions:

1. Cost estimation for water supply treatment plant is based on Minister of MoC decision No. 65/QĐ-BXD, dated 20 January 2021
2. Cost estimation for wastewater treatment plant is based on Minister of MoC decision No. 451/QĐ-BXD, dated April 21 2015
3. Cost for upgrading hygienic water to clean water is equivalent of 50% of the unit cost one cubic metter of new capacity
4. Cost estimation for water supply transission and distribution networks is based on ratio of 65%/35% (65% for network; 35% for treatment plant)
5. Cost estimation for wastewater collection network, including pumping station is based on ratio of 70%/30% (70% for network; 30% for wastewater treatment plant)

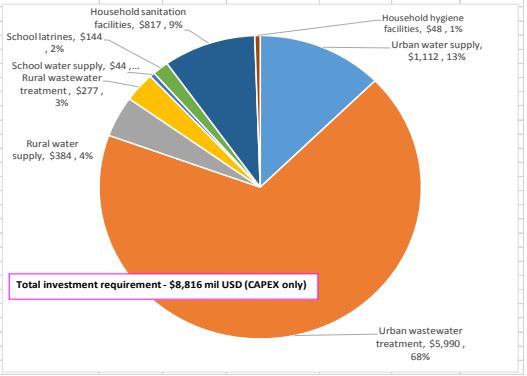
#	Categories	Treatment facilities								Networks			Grand total	
		New additional capacity			Upgrading from esisting Hygienic water supply to clean water			Sub-total 3		Weighting of treatment compared to total investment costs	Sub-total 5			
		M3/d	Unit investment cost [Mil. VND]	Sub-total 1 [Mil. VND]	M3/d	Unit cost [Mil. VND]	Sub-total 2 [Mil. VND]	Mil. VND	Mil. US$		Mil. VND	Mil. US$	Thousand Bil. VND	Mil. US$
1	Urban water supply	1,778,529	$ 4.40	7,825,526	544,535	$ 2.20	1,197,976.32	9,023,502	389	35%	$ 16,757,932	$ 723	$ 26	$ 1,112
2	Urban wastewater treatment	2,082,318	$ 20.00	41,646,352				41,646,352	1,797	30%	$ 97,174,822	$ 4,193	$ 139	$ 5,990
3	Rural water supply	0		-	1,414,698	$ 2.20	3,112,335.42	3,112,335	134	35%	$ 5,780,052	$ 249	$ 9	$ 384
4	Rural wastewater treatment	435,403	$ 4.43	1,928,837				1,928,837	83	30%	$ 4,500,619	$ 194	$ 6	$ 277
5	School water supply	230,413	$ 4.40	1,013,815				1,013,815	44				$ 1	$ 44
6	School latrines	18,828	$ 45.00	847,260	82,833	$ 30.00	2,484,990	3,332,250	144				$ 3	$ 144
7	Household sanitation facilities	1,262,874	$ 15.00	18,943,115				18,943,115	817				$ 19	$ 817
							Sub-total 4	79,000,207	3,435		$ 124,213,425	$ 5,360	$ 203	$ 8,768

0.0000431 currency conversion rate as at 29 july 2021 https://www.sbv.gov.vn/Ty

These unit investment cost were promulgated by Minister of Ministry of Construction, decision 65/QD-BXD, dated Jan 20 2021

Sewage connection

	Total costs	Thousand Bil. V	Mil. US$	
1	Urban water supply	$ 26	$ 1,112	12.6%
2	Urban wastewater treatment	$ 139	$ 5,990	67.9%
3	Rural water supply	$ 9	$ 384	4.4%
4	Rural wastewater treatment	$ 6	$ 277	3.1%
5	School water supply	$ 1	$ 44	0.5%
6	School latrines	$ 3	$ 144	1.6%
7	Household sanitation facilities	$ 19	$ 817	9.3%
8	Household hygiene facilities	$ 1	$ 48	0.5%
		$ 204	8,816	



Viet Nam statistics on population (actual and predicted), water supply and latrine usage (2019)

Table 1.1: Vietnam population

Year	Apr-19	2020	2025	2030	
National	**96,208,984**	**97,333,597**	**101,106,835**	**104,163,519**	
Urban	33,122,548	36,727,428	42,039,428	47,248,046	
Rural	63,086,436	60,606,169	59,067,407	56,915,473	
Change in population (since 2020)				6,829,922	
Period years				10	
Growth rate (individuals per year)				682,992	
Percentage change				7.02%	Total over 10 years
Source:					
GSO' 2019 Population and Housing Census					
2020, 2025 and 2030 forecasted by Danso.org					

Table 1.2: Urban population per urban class cities

#	Year	Apr. 2019	2020	2025	2030	
1	Special cities	8,896,500	9,513,400	11,088,400	13,094,200	32%
2	Class I cities	7,303,000	8,317,100	9,410,400	10,807,200	32%
3	Class II cities	3,875,900	4,329,900	4,824,000	5,113,100	24%
	Sub-total 1	**20,075,400**	**22,160,400**	**25,322,800**	**29,014,500**	
4	Class III cities	4,169,400	4,719,400	5,324,900	5,735,000	27%
5	Class IV cities	3,100,300	3,675,000	3,982,100	4,085,900	24%
6	Class V cities	5,777,448	6,172,628	7,409,628	8,412,646	31%
	Sub-total 2	**13,047,148**	**14,567,028**	**16,716,628**	**18,233,546**	
	Total:	**33,122,548**	**36,727,428**	**42,039,428**	**47,248,046**	
	Source: *GSO' 2019 Population and Housing Census*					
	2020, 2025 and 2030: Forecasted by Danso.org					

Table 1.3: Number of people using different type of water supply in 2019

#	Categories	Population	Households (HH)	Average size of HH [person/HH]	Number of people using different type of water supply					
					Clean water		Hygienic water		Purchase water from vendors	
					HH %	Person	HH %	Person	HH %	Person
1	National	**96,208,984**	**26,870,079**	3.6	**52.2**	**50,221,090**	**45.5**	**43,775,088**	2.3	2,212,807
	Urban	33,122,548	9,531,605	3.5	84.2	**27,889,185**	13.7	**4,537,789**	2.1	695,574
	Rural	63,086,436	17,338,474	3.6	34.8	**21,954,080**	62.8	**39,618,282**	2.4	1,514,074
2	Dien Bien	**598,856**	**134,273**	4.5	**17.8**	**106,596**	**82.2**	**492,260**	0.0	0
	Dien Bien Urban	86,136	24,646	3.5	83.3	**71,751**	16.7	**14,385**	0.0	0
	Dien Bien Rural	512,720	109,627	4.7	3.0	**15,382**	97.0	**497,338**	0.0	0
3	Soc Trang	**1,199,653**	**319,732**	3.8	**51.5**	**617,821**	**41.4**	**496,656**	7.1	85,175
	Soc Trang Urban	388,550	100,515	3.9	69.8	**271,208**	19.2	**74,602**	11.0	42,741
	Soc Trang Rural	811,103	219,217	3.7	43.1	**349,585**	51.6	**418,529**	5.3	42,988
	Source: *GSO' 2019 Population and Housing Census*									

Table 1.4: Number of HH using different type of latrine

#	Categories	Population	Households (HH)	Average size of HH [person/HH]	Number of HH using different type of latrines					
					Hygienic facilities		Other facility type		No latrine	
					%	HH	%	HH	%	HH
1	National	**96,208,984**	**26,870,079**	3.6	**88.9**	**23,887,500**	**9.8**	**2,633,268**	1.3	349,311
	Urban	33,122,548	9,531,605	3.5	98.1	9,350,505	1.8	171,569	0.1	9,532
	Rural	63,086,436	17,338,474	3.6	83.9	14,546,980	14.2	2,462,063	1.9	329,431
2	Dien Bien	**598,856**	**134,273**	4.5	**48.2**	**64,720**	**30.6**	**41,088**	21.3	28,600
	Dien Bien Urban	86,136	24,646	3.5	96.1	23,685	3.7	912	0.2	49
	Dien Bien Rural	512,720	109,627	4.7	37.4	41,000	36.6	40,123	26.0	28,503
3	Soc Trang	**1,199,653**	**319,732**	3.8	**80.0**	**255,786**	**20.0**	**63,946**	0.0	0
	Soc Trang Urban	388,550	100,515	3.9	89.6	90,061	10.4	10,454	0.0	0
	Soc Trang Rural	811,103	219,217	3.7	75.7	165,947	24.3	53,270	0.0	0
	Source: *GSO' 2019 Population and Housing Census*									

Unit investment costs (from MoC)

Category	Type	VND	USD	Needs in km	Costs in USD		
Water supply pipelines		cost per 1000 km	cost per 1000 km				
	iron	$883,560	$38.48	0.00	$0.00		
		$1,040,180	$45.30	0.00	$0.00		
		$1,296,050	$56.44	0.00	$0.00		
		$2,655,680	$115.65	0.00	$0.00		
		$3,904,790	$170.04	0.00	$0.00		
		$5,049,450	$219.89	0.00	$0.00		
	HDPE	$84,380	$3.67	0.00	$0.00		
		$98,270	$4.28	0.00	$0.00		
		$169,600	$7.39	0.00	$0.00		
		$171,210	$7.46	0.00	$0.00		
Waste water collection system (sanitation network)				Needs in km	Costs in USD		
		cost per 1000 km	cost per 1000 km				
	concrete pipes	$1,035,540	$45.10	0.00	$0.00		
		$1,240,050	$54.00	0.00	$0.00		
		$1,513,070	$65.89	0.00	$0.00		
	HDPE	$209,050	$9.10	0.00	$0.00		
		$172,560	$7.51	0.00	$0.00		
Water treatment plant				Needs in m3	Costs in USD		
	m3 capacity	cost to build 1000 m3	cost to build 1000 m3			total costs including maintenance	total costs including maintenanc
	40,000	$3.9400000	$0.0001716	$0.0000000	$6.8630653	$4.4300000	$0.0001929
	50,000	$3.9200000	$0.0001707	$0.0000000	$8.5352843	**$4.4000000**	$0.0001916
	100,000	$3.4900000	$0.0001520	$0.0000000	$15.1980317	$3.9200000	$0.0001707
	300,000	$3.3800000	$0.0001472	$0.0000000	$44.1570318	$3.8200000	$0.0001664
		VND	USD			VND	USD
Wastewater treatment plant	activated sludge	m3 capacity	VND/m3/daily	USD/m3/daily			
		1,999	23.0000000	0.0010016	2.0021774		
		2,000	**20.0000000**	0.0008709	1.7418947		
		4,999	23.0000000	0.0010016	5.0069458		
		5,000	18.0000000	0.0007839	3.9192632		
		9,999	20.0000000	0.0008709	8.7086028		
		10,000	16.0000000	0.0006968	6.9675790		
		29,999	18.0000000	0.0007839	23.5147952		
		30,000	13.0000000	0.0005661	16.9834738		
		99,999	16.0000000	0.0006968	69.6750931		
		100,000	10.0000000	0.0004355	43.5473687		
		199,999	13.0000000	0.0005661	113.2225924		
		20,000	6.0000000	0.0002613	5.2256842		
		30,000	10.0000000	0.0004355	13.0642106		
	biological lagoon	1,999	16.0000000	0.0006968	1.3928190		
		2,000	12.0000000	0.0005226	1.0451368		
		1,999	16.0000000	0.0006968	1.3928190		
		5,000	9.0000000	0.0003919	1.9596316		
		9,999	12.0000000	0.0005226	5.2251617		
		10,000	7.0000000	0.0003048	3.0483158		
		30,000	9.0000000	0.0003919	11.7577895		
These unit investment cost were promulgated by Minister of Ministry of Construction, decision 65/QD-BXD, dated Jan 20 2021							

Annex 5: Development partners' portfolios in WASH

Asian Development Bank cumulative loans[14] to Viet Nam accounted to US$17.43 billion as at March 2021, with water and other urban infrastructure and services constituting $1.6 billion across 57 projects. Among the latest WASH projects[15] are:

- US$8 million loan to expand the Tan Hiep Water Treatment Plant (WTP) in Binh Duong province, one of the fastest-developing provinces of Viet Nam: an agreement between the Asian Development Bank (ADB) and Binh Duong Water Environment Joint Stock Company (BIWASE). The expansion will increase production capacity, install additional water intake pumps, and build raw water transmission pipes from the Dong Nai River intake facility. The upgrade will help meet the rising water demand of residential and industrial customers in Ben Cat town, Tan Uyen town, Binh Duong new city, and Thu Dau Mot city – all of Binh Duong province – where industrial zones provide jobs for nearly 1.3 million locals and more than 500,000 foreigners. The financing package also includes a parallel co-financing of US$8 million from the Japan International Cooperation Agency.[16]

- US$100 million loan facility agreement, signed in 2018 with China Everbright International Limited (CEIL), to help a series of municipal waste-to-energy (WTE) plants in primary and secondary cities in the Mekong. This initiative is the first municipal WTE public-private partnership project in the country, representing a new model for improving solid waste management in cities, and mitigating climate change by reducing methane and increasing energy generation from renewable sources. ADB's assistance supports the construction and operation of a series of WTE plants with advanced clean technologies in multiple municipalities in Viet Nam. Each WTE plant will treat municipal solid waste and supply electricity to the local electricity grid. CEIL will develop and invest in WTE subprojects in Viet Nam to facilitate the harmless treatment, reduction, and reuse of household waste in the cities and produce clean electricity.[17]

The Asian Infrastructure Investment Bank (AIIB) is funding a US$47.5 million loan (US$95 million has been drawn to 2022) which will refinance the existing debt of the 125MW Dakdrinh Hydropower Plant, majority-owned by PV Power. The hydropower plant has been operational since 2014. The total project cost in 2011 was US$280 million; partially funded by a US$178 million loan with cover from an export credit agency and a guarantee by the Government of Viet Nam. Refinancing mobilizes private capital to enable removal of the Government's sovereign guarantee and insurance cover over the previous arrangement.[18]

The **World Bank's** Viet Nam Results-based Rural Water Supply and Sanitation under the National Target Program aimed to increase sustained access to water supply and sanitation services and improve sector planning, monitoring and evaluation in eight geographically clustered provinces. From 2013 to 2018 the project achieved the following results:

- More than 1.8 million people gained access to improved water resources and more than 1.4 million people gained access to improved sanitation services;

- The average coverage for water supply and sanitation services in participating communes reached 72 per cent and 88 per cent respectively in 2018, up from the baseline of 36 per cent and 56 per cent in 2012;

- The construction time of water and sanitation infrastructure was cut by 58 per cent and construction costs per unit were cut by 63 per cent. The size of water schemes in terms of average number of household connections increased by 353 per cent.

14 https://www.adb.org/countries/viet-nam/main

15 The list of projects across all stakeholders in this chapter is not complete, but rather is provided as example of activities

16 https://smartwatermagazine.com/news/asian-development-bank/adb-and-biwase-sign-deal-provide-sustainable-water-services-vietnam

17 https://www.adb.org/news/adb-china-everbright-international-facilitate-clean-waste-energy-ppp-viet-nam

18 https://www.vietnam-briefing.com/news/foreign-investment-flows-2022-trends-vietnam.html/

Water supply schemes supported under the programme were incentivized to meet robust sustainability criteria for a minimum of two years – operating under recognized management models, with low water losses, a high ratio of household connections billed, and a positive cost recovery ratio.

191 communes achieved Commune-Wide Station (CWS) status, benefiting 1.4 million people; of which 184 communes also achieved the Sustainable CWS status. In these communes, 100 per cent of facilities in schools and health centres were in proper maintenance, which had previously been a challenge.

The rural water supply and sanitation planning, monitoring and evaluation process at both national and local levels was streamlined to follow a highly structured and scientific approach, and elements of the Program-for-Results (PforR) financing approach were incorporated into broader national programmes.

IFC, a member of the World Bank Group, has committed a convertible loan of $15.3 million to DNP Water JSC, a private Vietnamese company, to increase access to and availability of clean water for urban households and residents in Viet Nam in response to the Government's call for increased private funding for clean water and piped-water coverage expansion. DNP Water is expanding its portfolio of mainly urban water treatment and supply facilities in Viet Nam and is planning to increase its treatment and supply capacity fivefold to 1 million cubic meters per day by 2025. IFC's investment supports the growth of the company by funding the construction of new bulk water treatment plants and the acquisition of privatised water supply companies. This helps improve access to clean water in mainly second- and third-tier cities in Viet Nam. The financing package may increase to $24.9 million to support further growth of the company.[19]

The French Agency for Development (**AFD**), a financial institution owned by the French Government, has provided 1.2 billion euros (over $1.5 billion) in sponsoring water projects in Viet Nam since 1993. The aid given to 30 projects in Viet Nam was sourced from the fund for official development assistance, and has mainly been directed at clean water supply, reduction of water supply losses, and waste treatment.[20] In addition to water supply projects in the Mekong Delta, AFD has financed water distribution projects in the Red River Delta and provided technical assistance for industrial and household wastewater treatment in Viet Nam.[21] Recently, AFD announced a $100 million concessional credit line to the Bank of Investment and Development in Viet Nam (BDIV), and technical assistance to help establish green financing in Viet Nam. As Viet Nam continues its rapid development while dealing with the disproportionately adverse effects of environmental challenges, it is searching to develop green financing to underpin a sustainable, efficient renewable energy system. The BDIV plays a crucial role in that transition and the assistance from the AFD is a significant first step in the transition to green financing in Viet Nam.[22]

Finland's grant-based bilateral development cooperation programmes came to end in 2018, and a bilateral framework agreement was signed on January 21, 2021, under which Finland will provide more than $100 million for Viet Nam's public investment projects. The agreement plays an important role in promoting cooperation between the two countries and bringing their relations to new heights, shifting from official development assistance to mutually beneficial cooperation. Finland will provide Viet Nam with additional public funding, and broader access for Finnish companies with years of experience, expertise and suitable technology solutions to the Vietnamese market. Minister Dien said the Ministry of Industry and Trade in coordination with the Ministry of Finance will devise optimal plans to use this funding.[23]

19 https://pressroom.ifc.org/all/pages/PressDetail

20 https://reliefweb.int/report/viet-nam/france-provides-15-billion-vietnam-water-projects

21 https://en.vdb.gov.vn/news801/afd-will-finance-water-supply-projects-in-rural-areas#:~:text=Many%20rural%20areas%20in%20Vietnam,the%20clean%20water%20supply%20systems.

22 https://borgenproject.org/green-financing-in-vietnam/

23 https://moit.gov.vn/en/news/latest-news/trade-pact-boosts-vietnam-finland-relations.html

Annex 6: Blended Finance and structures

ABOUT BLENDED FINANCE

The Addis Ababa Action Agenda recognizes blended finance (BF) as a key instrument for moving the development agenda forward and reaching the Sustainable Development Goals. It defines blended finance as activities that combine "concessional public finance with non-concessional private finance and expertise from the public and private sector, special-purpose vehicles (SPV), nonrecourse project financing, risk mitigation instruments and pooled funding structures". The OECD report 'Making Blended Finance Work for Water and Sanitation' further notes that blended finance has the potential to attract additional finance for water-related investments, as well as acting as a market-building instrument to provide a bridge from reliance on concessional financing towards more self-sustaining financing approaches.

The 'blending' of financial investments from multiple partners assumes that, in the mix of funds, there will be an underpinning layer of capital with high tolerance to financial risk. This layer could be in a form of a grant, a subsidy, a guarantee, or first-loss or concessional capital.[24] The purpose of this layer is to 'protect' the financial returns of more senior capital in the structure. In such blended finance structures, there is a degree of risk-return 'subsidy' which is critical to 'catalysing' investments. Such structures support the early-stage testing and refining of new business models prior to proving and scaling these models – potentially under more commercial, traditional capital arrangements.

Funding innovations that catalyse new sources of capital are of interest to all sectors, particularly WASH. The WASH sector presents four unique challenges. First, the sector offers fewer commercially viable business models globally: that is, models with high levels of financial returns and social impacts. Second, water is such a basic human right, that attempts to 'commercialize' water access and sanitation can lead to outcomes that are unaffordable for communities and therefore also unsatisfactory for investors. Third, sanitation and human waste management may not be attractive to some parties and can even be subject to cultural taboos, making it difficult to attract talent, capital and entrepreneurs who are willing to tackle this area. Finally, WASH investments have historically been subject to political interference, low willingness to pay, weak regulatory environments and low service provider performance – all of which hinder the development of private finance for the water sector.

Blended finance could be adopted to address the perceived risks of WASH investments (responding to the above challenges) and help attract parties with different risk appetites and return expectations. Blending is used to make projects with significant development outcomes financially viable for investors: projects that could not be fully structured on commercial terms. Blending aims to make the funding transaction attractive for all parties, thus achieving goals critical to impact and sustainability. These goals include increasing the overall pool of capital, attracting new, nonconventional participants, and building more heterogenous partnerships for strengthened systems resilience and impacts. An important principle in the use of blended finance is that its use be temporary – that is, 'transitional'. Over time, projects funded through blended structures should help stimulate strong private sector markets that can then grow without government assistance and provide critical income, services, and revenue to society.

SOURCES OF FINANCE IN BLENDED PARTNERSHIPS

Historically, the common practice of blended finance is derived from the collaboration of the government and private sector in the form of PPPs. Over the past five years, reflecting the global development of

24 First-loss is a pool of funding that offers compensation to investors or lenders should the entity (investee or borrower) default. "Concessional financing is financing on terms and/or conditions that are more favourable than those available from the market. Concessionality can be achieved through one or a combination of the following: a) Interest rates or expected returns below those available on the market; b) Other terms that would not be accepted/extended by a commercial financial institution such as: longer maturity (years before principal for a loan needs to be repaid), longer grace periods (time before interest or other payments are required), reduced security (rights to claim certain company assets if the loan is not repaid), lower rank (order in which financiers are repaid by the borrower), longer repayment profile (amount and timing of principal repayments)", Using Blended Concessional Finance to Invest in Challenging Markets – ECONOMIC CONSIDERATIONS, TRANSPARENCY, GOVERNANCE, AND LESSONS OF EXPERIENCE: International Finance Corporation, February 2021

BF, other sources have come into play. Beyond conventional donors and development partners, they include philanthropies, institutional investors (including insurance companies, banks, investment funds and fund managers, asset owners, pension funds), commercial investors (mostly via foundation arms of commercial businesses), and the public as individuals or family offices. Individuals can participate in BF through crowdfunding, fixed income (bond market), stock exchange (capital market), and through other contributions (use of the charitable practice of zakat in Indonesia is an interesting recent example). Increased participation in BF is driven by paradigms shifting from traditional funding with short-term impact – such as providing social amenities like education, food, health and sanitation – to long-term impact through promoting and making investments in sustainable businesses.

There are several benefits and efficiencies from partnering with the private sector in blended structures. Commercial investors typically commit **larger amounts of capital** (the median investment size between 2015 and 2020 was $20 million) to larger transactions (the median transaction size between 2015 and 2020 was $68 million),[25] and they invest both debt (47 per cent of commitments from 2015 to 2020) and equity (50 per cent)). Institutional investors (pension funds and insurance companies), sovereign wealth funds, banks, and asset / wealth managers have a particular need for larger deal sizes, as they have significant assets under management (AUM) and require large deal sizes to avoid the high relative transaction costs associated with managing many small deals.

Financial institutions, corporates and intermediaries have large **local presences** in developing markets, and **in-house expertise**. Also, there is an increasing prevalence of blended private **equity funds** (funds primarily taking equity positions) as a percentage of overall blended funds, as is captured in the Convergence blended finance database in 2021. This is also reflected on the investor side, with increased private equity / venture capital firms providing financing to blended structures.

Philanthropic organizations, including foundations and NGOs, represented a 9 per cent share in all blended finance transactions in 2018-2020. Most investments provided by foundations and NGOs for blended finance have been **risk bearing** – either on concessional terms (60 per cent of commitments invested since 2015 are priced at below-market terms), or first-loss debt, or equity (10 per cent of commitments), compared to other funders. Despite being a modest share of total commitments to blended deals, foundations and NGOs have more frequently participated in **social sectors** such as health and education compared to other funders.

PARTICULARS OF PARTNERSHIPS (CONS AND PROS)

There are obvious **financial and development additionalities** arising from blended finance arrangements. *Financial additionality*, as an example, may increase private lenders' provision of finances (in case of financing institutions) and/or improve the financial condition of targeted credible clients (in the case of enterprises). Improvements in financial conditions may include, for example, larger loan size, longer loan maturity, decreased interest rates or lower collateral requirements.[26] *Development additionality*, for example from a *guarantee* such as might be provided by a development partner or a private partner, may have such positive impacts on beneficiary enterprises as increased investment probabilities, improved productivity, higher employment – that is, greater chances that the firm will survive. There could be **adverse development impacts**, such as the risk of default among those enterprises (with lenders bearing risk losses), or the possibility of weakening credit discipline of stakeholders. To avoid these adverse impacts, and to achieve a more profound development impact and balanced financial returns, blended finance should be implemented with a **diverse mix of financial instruments** and **diverse funders**. The fund portfolio should offer a balanced mix of risk, return and impact expectations.

It needs noting that blended finance may be challenged by **differences in the *why* rationale** for its creation, how it is used and the way the terms concessionality, mobilization and impact are understood by development and private sector partners.

25 CONVERGENCE, The State of Blended Finance, 2021

26 CORE CONCEPTS IN BLENDED FINANCE: ASSESSMENT OF USES AND IMPLICATIONS FOR EVALUATION © OECD 2021

There are **multiple challenges** when working as blended partners, coming from various angles – putting the capital together, deploying the capital and then making sure that development impacts remain true within original intentionality through project implementation and upon completion. The most commonly observed issues are a culture clash, trust, disparity in interests and risk tolerances of the public and private sector. Overcoming those requires willingness, preparedness to work together, effort and compromise.

Known challenges for partnerships within blended structures for private and public sectors are:

- **Underdeveloped and weak financial systems** and no appropriate structures or legislative support to accommodate such innovative funding;

- **Deficiency in bankable/investable/feasible** pipeline/projects ready for financing (may be caused by regulations or decisions that fail to support sustainability). Weak institutional capacity in formulating and presenting bankable projects impedes the ability to mobilize private investment. Across many developing countries, the lack of a pipeline of sustainable, bankable projects at scale, and of established and broadly accepted methodologies for assessing the risk of new technologies and sustainable investment projects, hinder the mobilization of more sustainable finance—hence impeding the redirection of flows away from traditional and non-sustainable investments.

- **Limited evidence and data** on successes or failures of blended finance structures;

- **Limited availability** of **blended finance platforms** to align capital for deployment;

- Lack of coordination and the **absence of a regulatory framework** lead to scattered approaches among government institutions, resulting in ineffective and inefficient interventions. Because developing new regulation is a very complex and time-consuming process, governments often utilize existing regulations to govern BF structure. However, the resultant lack of BF clarity or solid regulation suppresses the appetite of commercial finance players to participate.

- **Other issues**, coming from bad experiences associated with PPPs and thus impacting BF willingness for partnership:

    - Lack of transparency;

    - Too complex legal arrangements, unclear risk bearing responsibility — risk allocations between public and private are mostly done by external contractors, hence grant and public budgets are a preferred domain, as a 'known familiar ground';

    - Lack of skills (project finance as example);

    - Legal frameworks overlap or conflicts across multiple government agencies;

    - Permit and license process issues;

    - Land acquisition and asset ownership issues;

    - Overall culture clash, trust issues, disparity in interests and risk tolerances (private vs public).

That noted, blended finance provides a medium where different partners in the development community can still **work together** with investors and other stakeholders in a complementary way to fill knowledge gaps and benefit from each other's expertise and efficiencies.

EXAMPLES OF BLENDED STRUCTURES

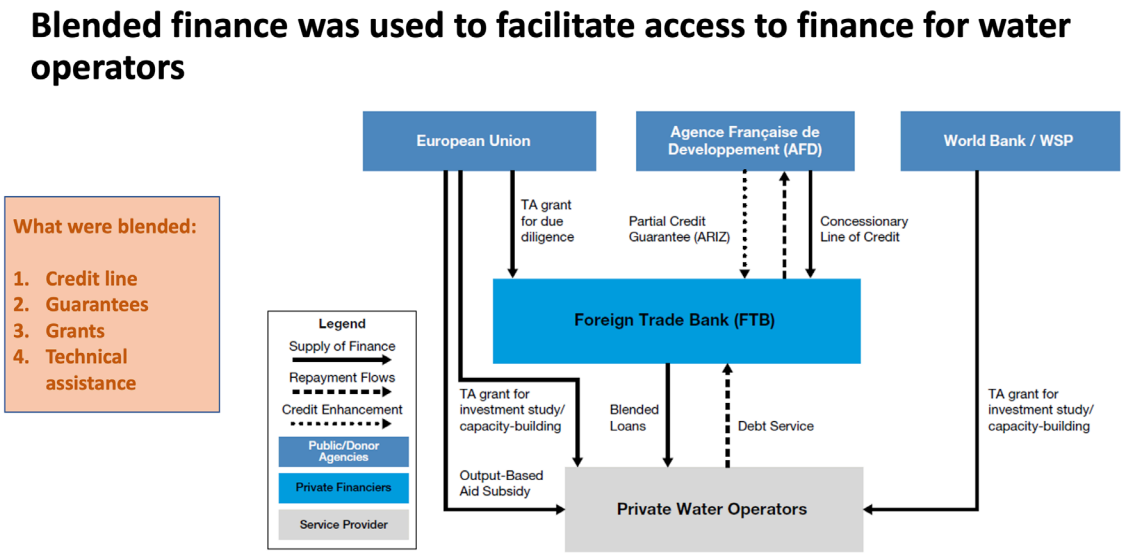
Cambodia

Up until recent years, Cambodia drew heavily on transfers from ODA and philanthropy. The regulation of the piped water sector has recently evolved, including the control of water tariffs. Blended finance structures – which combine multiple revenue sources and investment flows, and diversify deployment of capital across sectors and regions – work well in Cambodia. Where the design is fit-for-purpose, these structures can work in conjunction with other programmes to provide sustainable financial and development returns while sending a broader message to the global community that the market is investable.

AFD is one of the key players in the blended finance space in Cambodia. AFD, in partnership with the World Bank, European Union and Foreign Trade Bank (FTB) in Cambodia, continue to support private water and electricity operators in Cambodia with the aim of broadening access for people to meet their basic needs.[27]

The *Access to Finance Program for Small Water and Rural Electrification Enterprises in Cambodia*, launched in 2014 and currently in stage 2, includes the provision of a concessional loan/credit line ($15 million, with $5 million dedicated to water supply) to the FTB, a risk sharing guarantee of $5 million, and grants (funded by WB and EU) to support FTB in loan structuring and water finance capacity building. Also included is the provision of technical assistance by Groupe de Recherche et d'Echanges Technologiques (France) (GRET), Innovative Services Engineering & Advisory (ISEA), Emerging Markets Consulting (EMC), and see-saw for business plan preparation, technical studies, as well as construction work supervision. There is a $0.9 million subsidy to encourage water operators to reduce costs in connecting the poor to water and improving water quality. The *Access to Finance Program*[28] is an example of blended finance facility which structures capital from three agencies and channels funds through FTB in Cambodia (See Access to Finance Program Structure Figure).

Access To Finance Program Structure (Cambodia)



27 https://www.afd.fr/en/actualites/broadening-access-water-rural-cambodia

28 Presentation -Blended Finance in Practice: The case of water supply in Cambodia, OECD – Korea Knowledge Exchange Sessions, June 2021, PROPARCO, AFD, World Bank; Phyrum Kov & Pheaktra Thlang

Indonesia[29]

To achieve its ambitious growth targets, Indonesia needs to address critical infrastructure gaps and invest at least $600 billion over the next 10 years in building and upgrading infrastructure – according to estimates by McKinsey & Company. The Indonesian Government (GoI) has shown strong commitment to involving the private sector in infrastructure development. They introduced the legal concept of PPPs in 2005 to boost procurement through a competitive tender process; they have updated multiple regulations; and they have established many blended finance facilities, including funds and special purpose vehicles which can bypass parliamentary approvals (so called 'BLUs') and are not based on earmarks of the government's budgeting mechanism.

Beside facilities established by the GoI, many donors and development partners have implemented BF mechanisms through their programmes. The United States Agency for International Development's (USAID's) successful implementation of credit guarantees is known among the donor community. Other development finance institutions (DFIs) such as the Asian Development Bank (ADB), KfW and AFD have been successful in implementing concessional loans. However, these attempts have not achieved the goal of bringing more private funding into development activities. Among the main criticisms of these donor-supported programmes are: mismatched objectives between donors and the GoI; short timelines from planning phase to execution; and exhaustive requirements. The most frequent comments from participating private sector companies is that these BF facilities have higher or similar costs of funding compared to existing commercial facilities.

In an effort to address these concerns, Bappenas (the Indonesian Government's planning agency) initiated the Indonesia SDG Financing Hub, whose main objective is to facilitate and coordinate BF initiatives from various sources in order to fund SDG projects. Bappenas developed this Financing Hub as part of their mandate to implement Presidential Regulation No. 59/2017 regarding SDGs. It is the only regulation that explicitly mentions that funding for development could come from other sources than the state budget. This line is interpreted as the justification for developing BF in Indonesia.

Example of blended finance fund to expand utilities' services in Indonesia[30]

Water.org, a non-governmental organization funded by philanthropic donations, partnered with the Batang District Water Supply Company Indonesian – an Indonesian regional water supply company located in Central Java, Indonesia – in 2016 to support the expansion of urban utility water and sanitation services. Regional companies, or Perusahaan Daerah Air Minum (PDAMs) in the Bahasa language, are mandated to provide clean water and are monitored by their respective regional governments. Water.org also partnered with the microfinance institution Koperasi Mitra Dhuafa (KOMIDA) from late 2018. KOMIDA provides debt as microfinance loans to low-income households seeking a connection to a piped water supply or a sanitation system.

The Batang District is located in Central Java Province and consists of 15 sub-districts ('Kecamatan') comprising 248 villages with a total population just over 700,000, of which 16 per cent is urban and 84 per cent is rural. The PDAM serves nearly 42 per cent of Batang District's population and is driven by its mission to, among other things, increase service coverage and provide clean water supply services to the community. To achieve these goals, the PDAM faced the dual challenge of (i) attracting the commercial finance needed to expand its services into poorer areas while (ii) adapting their array of services to better attract and retain poorer clients with distinct financial needs.

Batang District PDAM partnered with Water.org in September 2016 with a special focus on growing the number of low-income clients it served.

One component of achieving that goal was client-facing: not only offering a wider range of financing options that catered to the needs of low-income households, but also alerting potential clients to these newly available financing options through targeted advertising efforts. Batang District PDAM

29 Sources: USAID library, McKinsey & Company

30 OECD Library

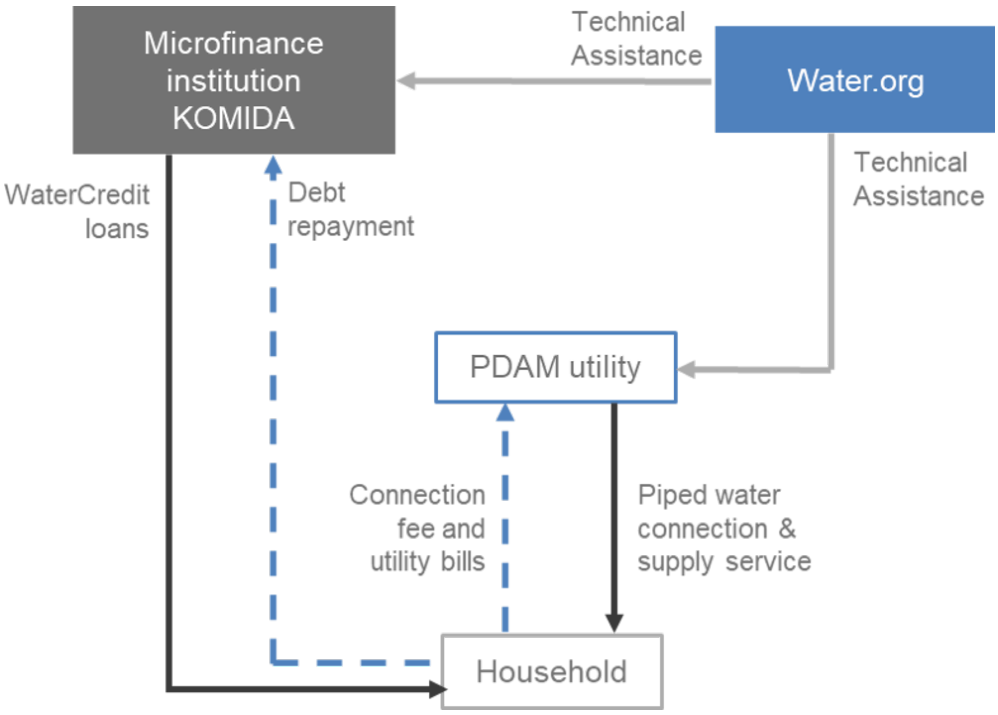
was already offering some financial services in-house to its clients – a system in which the up-front connection cost is paid over a series of instalments that are incorporated into a water client's monthly utility bill – but sought Water.org's technical assistance to increase its efficiency in this activity and also advertise its availability. Additional finance options for PDAM clients who are existing clients of KOMIDA are available through the MFI's dedicated water and sanitation loans. This provides KOMIDA clients with a greater variety of financial options from which they can connect to Batang District PDAM services. Technical assistance on market analysis and demand generation was also provided to the PDAM.

The second component of serving more low-income clients required expanding pipelines and services to more areas where this population lives. Batang District PDAM again sought technical assistance from Water.org, which came in the form of assistance in the development of Standard Operating Procedures for financial service offerings, financial recordkeeping and reporting, and human resources recruitment. Having these procedures in place positioned the PDAM as more attractive to investors when applying for the credit they needed to expand.

As of August 2018, nearly 5,000 new households were connected to the Batang District water supply system. Notably, 1,650 of those households (approximately 34 per cent) benefitted from internal financing options provided by the PDAM, while the majority of others were able to self-finance the connection. Batang District PDAM increased the proportion of their clients utilizing internal PDAM financing from around 70 per month in 2015–16 to 248 in June 2017.

To summarize, the PDAM utilized concessional support from Water.org to build its client base. A few of those new clients financed their connections via loans available through Water.org interventions with MFIs, but many are financing through the PDAM itself or through their own means. Simultaneously, the PDAM improved internal processes, which enabled its successful application for public grant support. These fundamental improvements will also assist Batang District PDAM in eventually becoming successful at attracting commercial investment.

Structure of the BF solution



Multi country

The Climate Finance Partnership (CFP)

In January 2019, the Climate Finance Partnership (CFP) was announced, which aims to direct capital into climate-related projects in developing countries. The Partnership brings together BlackRock, the world leader in asset management, Agence Française de Développement (AFD), the German Ministry for Environment and the Hewlett and Grantham foundations.

The fund consists of the first loss tranche of $100 million which will be financed by France and Germany each contributing $30 million. The Hewlett Foundation and the Grantham Foundation will also contribute to this tranche.

AFD Group has been identified as the operator capable of implementing this partnership for France. AFD will provide knowledge of climate issues in emerging countries and expertise in the field: environmental and social expertise, tools for measuring the impacts (carbon footprint assessment) as well as climate taxonomy (project eligibility will be determined based on the Common Principles adopted by multilateral development banks).

The CFP is structured as an investment fund managed by BlackRock, which will use the first-loss tranche to mobilize at least US$400 million from institutional investors. BlackRock will be in charge of making the investment decisions, in accordance with the established investment policy.

There is a need to increase the number of climate-related projects in low- and middle-income countries and to increase the amount of private financing for these projects.

The CFP plans to invest between US$500 million and US$1 billion in climate change mitigation projects in emerging countries. The funds will be invested in climate infrastructure in South-East Asia, Latin America and Africa. This includes the production of renewable energy, energy efficiency in residential, commercial and industrial sectors, energy storage and low-carbon transport services.

This project, like all projects monitored by AFD Group, will be subject to the same environmental, social and governance standards. These standards will apply to BlackRock and any other fund managers. Through its subsidiary, Proparco, AFD will be part of the fund's consultative committee to ensure the proper implementation of the investment policy. The most important points of this policy that pertain to governments cannot be amended without approval from France and Germany.

For public donors, including France and AFD, this an opportunity for the large-scale mobilization of private savings and the chance for a significant global asset manager to handle investment projects for climate action and to benefit Africa. [31]

31 Source: Convergence, 2018, Reuters, 2020 and Candid, 2020

Annex 7: Sample of provincial WASH-related medium-term (2016-2020) investment plans

Mid-term investment for WASH in 14 provinces during 2016-2020

Đơn vị: Triệu đồng

TT	Province	Project/Program	Total invesmtent amount		
			Rural water supply and sanitation	Urban water supply	Urban wastewater collection and treatment
1	2	3	4	5	6
1	Bac Kan	WB' output based rural water supply and sanitation project	213,630		
2	Thai Nguyen	Dự án thoát nước và xử lý nước thải thành phố Thái Nguyên			950,489
		Drainage and wastewater system for sorthern center of Thai Nguyen city			438,544
3	Kon Tum	Water supply project for district town of Ia H'Drai		99,984	
		Water supply project for Sa Thay town		116,0	
		WB' output based rural water supply and sanitation project	203,263		
4	Son la	Water supply project Chieng Dong commune	6,306		
		Water supply project Chieng Mung commune	8,072		
		Water supply project Muong Bu commune	13,651		
		Water supply project Van Ho commune	10,598		
		Water supply projects for Lóng Luông, Pa Kha, San Cải, Tân Lập, Co Lòng Van Ho dstrict	3,621		
		Water supply projects for Lóng Bon, Suoi bon	1,942		
		Water supply project for co Cham	1,800		
		Water supply projects for Co Tang	1,800		
		Nước sinh hoạt bản Lọng Mòn xã Huổi Một	758		
		Wastewater collection and treatment Moc chau towns			201,611
		Wastewater collection and treatment Son La town			472,626
		WB' output based rural water supply and sanitation project	219,980		
5	Cao Bằng	WB' output based rural water supply and sanitation project	1,000		
		Water supply for Cốc Rầy, Nậm Dọi communities, Thông Huề commune, Trùng Khánh district	1,976		
6	Phu Tho	Wastewater collection and treatment project for Thuy Van city			141,014
		Wastewater collection and treatment project for Viet Tri city			841,390
		WB' Red river delta rural water supply and sanitation project	651,608		
		WB' output based rural water supply and sanitation project	244,400		
7	Ha Giang	Water supply project for Viet Quang town		12,803	
		Water supply project for Khuoi Ly, Thuong Binh commune, Bac Quang district	5,270		
		Water supply project for Dong Tam commune, Bac Quang district	4,156		
		Water supply project for Tien Kieu commune, Bac Quang district	3,581		
		Water supply project for Dong Yen commune, Bac Quang district	3,934		
		Water supply project for Dong Tien commune, Bac Quang district	3,475		
		Water supply project for Sinh Lung commune	7,355		
		Water supply project for Sung Trai commune	14,877		
		Water supply project for Pho Cao commune, Dong Van district	11,523		
		Water supply project for Sua Pa cummunity, Pho Cao commune, Dong Van district	5,822		
		Water supply project for Vinh Quang town		14,286	
		Water supply project for Po Ly Ngai commune, Hoang Su Phi district	1,986		
		Water supply project for Ban May commune, Hoang Su Phi district	16,324		
		Water supply project for Ta su Chong commune, Hoang Su Phi	177		
		Water supply project for Sung Mang commune, Meo Vac district	19,478		
		Water supply project for Tin chia Rau, Meo Vac town, Meo Vac district	10,967		
		Water supply project for Khau Lan, Quyet Tien commune, Quan Ba district	15,443		
		Water supply project for Khau Bung, Quyet Tien commune, Quan Ba district	16,554		
		Water supply project for Bat Dai Son commune, Quan Ba district	17,057		
		Water supply project for Tam Son town, Quan Ba district	21,971		
		Water supply project for Dong Tinh, Quyet Tien commune, Quan Ba district	17,660		
		Water supply project for Lung Tam Thap, Lung Tam commune, Quan Ba district	9,737		
		Water supply project for Lung Hau, Thai An commune, Quan Ba district	17,943		
		Water supply project for Lung Cung, Thanh Van commune, Quan Ba district	8,068		
		Water supply project for Po chua Lung, Can Ty commune, Quan Ba district	14,490		
		Water supply project for Khung Nhung, Quan Ba commune, Quan Ba district	14,955		
		Water supply project for Tan Tien, Quyet Tien commune, Quan Ba district	403		
		Water supply project for The Va, Ta Van commune, Quan Ba district	612		
		Water supply project for Tat Ca, Tung Ba commune, Vi Xuyen district	5,939		
		Water supply project for Cao Bo commune, Vi Xuyen district	4,986		
		Water supply project for Ma Hong phin, Minh Tan commune, Vi Xuyen district	5,148		
		Water supply project for Tat Ca, Tung Ba commune, Vi Xuyen district	6,616		
		Water supply project for Bach Ngoc commune, Vi Xuyen district	4,102		
		Water supply project for Trung Thinh commune, Xin Man district	4,531		
		Water supply project for Na Pha, Mau Due commune, Yen Minh district	11,110		
		Water supply project for Phieng De, Mau Due commune, Yen Minh district	5,746		
		Water supply project for Po Cho Lung, Ngam La commune, Yen Minh district	7,175		
		Water supply project for B3, Phu Lung commune, Yen Minh district	10,710		
		Water supply project for Lung Vai, Bach Dich commune, Yen Minh district	781		
		Water supply project for Duong Thuong commune, Yen Minh district	7,301		
		Water supply project for Gia Vai, Du Tien commune, Yen Minh district	2,419		
		Water supply project for Tham Nu 1+2, Du Tien commune, Yen Minh district	4,060		
		Water supply project for Pho Cho, Mau Due commune, Yen Minh district	4,106		
		Water supply project for Mau Long commune, Yen Minh district	7,515		
		Water supply project for Sung Sang, Sang Trang commune, Yen Minh district	1,908		
		Water supply project for Phieng De, Mau Due commune, Yen Minh district	5,746		
		Water supply project for Xin Man commune, Xin Man district	16,046		
		Water supply project for Xin Man Border Gate Area, Xin Man district	4,963		
		Water supply project for Sam Pa Border Gate Area,	19,860		
		Water supply project for C20 Trinh Sat and C27 Thiet Giap	1,856		
		Water supply project for Vi Thuong Commune, Quang Binh distric	5,534		
		Water supply project for Na Chi Commune, Xin Man district	2,343		
		Thanh Thuy boder gate wastewater treatment system			24,032
		Ha Giang city wastewater treatment prject			224,947

8	Nam Dinh	No WASH project during this period			
9	Thanh Hoa	Water supply project for Ban On, Tam Chung Commune, Muong Lat district	349		
		Water supply project for Ban Pom Khuong, Tam Chung Commune, Muong Lat district	222		
		Water supply project for Mc island, Hai Binh Commune, Tinh Gia district	1,220		
		Water supply project for Muong Lat town, Muong Lat district		1,319	
		Water supply project for Quan Son town,		710	
		Water supply project for Kim Tan town,Thach Thanh district		3,383	
		Water supply project for Quan Hoa town,		2,900	
10	Hanoi	Yen Xa wastewater treatment system			588,000
		WB' output based rural water supply and sanitation project	100,500		
11	Gia Lai	Water supply project for Duc co town,		49,878	
		Water supply project for Kong Chro town,		40,000	
		Water supply project for Phu Thien Chro town,		44,000	
		Expansion water supply system for Nhon Hoa town		20,200	
		Water supply project for Ia Pa district,		90,000	
		WB' output based rural water supply and sanitation project	173,225		
12	Dak Nong	WB' output based rural water supply and sanitation project	166,899		
13	Quang Binh	Environment sanitation project for Dong Hoi city			66,640
		Quang Trach rural water supply project	16,600		
		Quang Ninh rural water supply project	35,517		
		Ba Don town drainage and sanitation project			360,053
		Rural water supply and sanitation project for central region, Quang Binh component	10,000		
14	Yen Bai	Rural water supply project for Nam Muon commune, Van Chan district	3,200		
		Rural water supply project for Ban Tu, ban Pao, Son Luong commune, Van Chan district	2,600		
		Drainage and wastewater system for resident area of Lang Nhi commune, Tram Tau district	2,000		
		Water supply system for western part of red river (Yen Bai city)		35,237	
		Upgrading the water supply system for Co Phuc town, Tran Yen district		2,134	
		Water supply systwm for Thinh Hung residential area, Tran Yen district	4,500		
		Water supply project for Lanhg Nhi commune, Tram Tau district	2,160		
		Total	**2,517,716**	**416,834**	**4,309,346**

TT	Province	Project/Program	*Total invesmtent amount*		
			Rural water supply and sanitation	Urban water supply	Urban wastewater collection and treatment
				2,483	
		Water wupply for house hold effected by Noong Bua gabage damping site	2,500		
		Water Supply pipeline for Ban Phu, Điện Biên district	3,247		
		Water supply for Pom Lốt, Dien Bien district	6,800		
		Water supply for bản Pắc A1, Cô Sa commune, Nậm Pồ district	430		
		Water Supply for boder gate Huổi Puốc	1,000		
		Water supply for bản Là Chà, Pa Tần commune	2,200		
		Water supply for bản Púng Bon, Pa Thơm Coomune	2,000		
		Water supply for ban Nậm Kè, Nậm Kè commune	2,100		
		Rehabilitation of wastewtaer collection and treatment for Dien Bien hospital			1,352
		Counterpart fund allocation for wastewater treatment project for Dien Bien city			3,910
		WB' output based rural sanitation and water supply project	57,935		
		Rural water supply Ban Co co, Ngõi Cay commune	1,089		
		Rural water supply Ban Khen Xuan Lua, Xuan Lao commune	520		
		Rural water supply Ban Pu Kho, Ang Cang commune	520		
		Rural water supply Ban Huoi Luong, Nam Lich commune	520		
		Rural water supply Ban Tham Hong, Nam Lich commune	520		
		Rural water supply Ban Huoi Cam, Bung Lao commune	520		
		Rural water supply Ban Huoi Chan I, Muong Dang commune	520		
		Rural water supply Ban Dong, Muong Dang commune	540		
		Rural water supply Ban Giuang, Ang Cang commune	540		
		Rural water supply Ban Pu Sua, Ang Cang commune	540		
		Rural water supply Ban Houi Ly, Muong Lan commune	540		
		Rural water supply Ban nông E, Muong Loi commune	909		
		Rural water supply Ban Ca Hau, Na U commune	2,964		
		Rural water supply Ban Pa Nam B, Chieng Xo commune	4,000		
		Rural water supply Ban Nam Ma, Pu Hong commune	1,600		
		Rural water supply Ban Phieng Muong A, Pu Hong commune	3,000		
		Rural water supply Ban Hang Lia B, Hang Lia commune	2,200		
		Rural water supply Ban Tu Xa, Phi Nhu commune	808		
15	Dien Bien	Rural water supply Ban Huoi Dap	900		
		Rural water supply Ban Tin Toc	1,000		
		Rural water supply Ban Huoi Diet, Muong Tung commune	1,100		
		Rural water supply Ma Thi Ho commune	3,132		
		Rural water supply Ban Ho Muc, Nam Nen commune	2,020		
		Rural water supply ban Nam La, Muong Nhe commune	2,271		
		Rural water supply ban Po Nhu Kho, Xin Thau commune	1,980		
		Rural water supply ban Xin Chai I, Na Hy commune	4,200		
		Rural water supply ban Huoi Cha, Cha Cang commune	2,100		
		Rural water supply ban Na Lay, Na U commune	800		
		Rural water supply ban Hat Tao, Na Tong commune	1,430		
		Rural water supply ban Loi I, II, Muong Loi commune	2,750		
		Rural water supply ban Xom, Pu Luong commune	1,430		
		Rural water supply ban Cha, Pu Luong commune	800		
		Rural water supply Muong Nhe district town		3,319	
		Rural water supply ban Cay So, Nam Vi commune	564		
		Rural water supply ban Huoi Pin, Muong Tong commune	2,726		
		Rural water supply Pa Ma, Sen Thuong commune	858		
		Rural water supply ban Ta Co Ky, Sin Thau commune	1,129		
		Rural water supply ban Huoi Lech, Huoi Lech commune	1,533		
		Rural water supply ban Phong Chau, Pa Ham commune	2,885		
		Rural water supply ban Ten Ca	1,990		
		Rural water supply Chieng Dong commune	3,185		
		Rural water supply Nam Nen commune	5,509		
		Rural water supply Phinh Sang commune	1,500		
		Rural water supply ban Nam Cut, Nam Nen commune	1,800		
		Rural water supply ban Moc Năm, Phu Luong commune	1,000		
		Rural water supply ban Nam Hai I, II, Pom Lot commune	1,050		
		Rural water supply ban Pung Bua, Na U commune	1,600		
		Rural water supply ban Na Ha 1, 2, Phu Lung commune	882		
		Total Dien Bien	**154,186**	**5,802**	**5,262**

TT	Province	Project/Program	*Total invesmtent amount*		
			Rural water supply and sanitation	Urban water supply	Urban wastewater collection and treatment
16	Soc Trang	Wastewater collection and treatment for Soc Trang city (phase 2)			427,058
			2,671,902	422,636	4,314,608

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Ha Noi Office: **Add:** The Green One UN House, 304 Kim Ma, Ba Dinh District, Ha Noi, Viet Nam
Tel: +84 (0) 24 3.850.0100 | **Fax:** +84 (0) 24 3.726.5520

HCMC Office: **Add:** Unit 507, Sun Wah Tower, 115 Nguyen Hue Boulevard, District 1, Ho Chi Minh City, Viet Nam
Tel: +84 (028) 3.821.9413 | **Fax:** +84 (028) 3.821.9415

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