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Authors: Mai, Vu Quynh, Ngoc Anh, Hoang Thi, Thao Anh, Hoang, and Van Minh, Hoang

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Review of Public Financing for Water, Sanitation, and Hygiene Sectors in Vietnam

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Vu Quynh Mai, Hoang Thi Ngoc Anh, Hoang Thao Anh and Hoang Van Minh

Center for Population Health Sciences, Hanoi University of Public Health, Hanoi, Vietnam.

ABSTRACT

BACKGROUND: Vietnam declared its national roadmap towards Sustainable Development Goals number 6 by 2030. However, specific supporting programmes and financial means to proceed with the roadmap have not been passed on. Evidence on the financing for water, sanitation, and hygiene (WASH) being allocated or spent has not been well documented in Vietnam. This study aimed to obtain an overview and assessed the public funding across the WASH sector of Vietnam in 3 fiscal years 2016, 2017, and 2018.

METHODS: A cross-sectional study was conducted for information about the public financing for WASH at both national and sub-national levels. An activity-based costing approach was applied to determine WASH-related public expenditure. Fourteen focus group discussions with key stakeholders were used to identify the WASH activities and to access financial reports of these relevant institutions. TrackFin methodology was used to assemble the public financing for WASH in Vietnam.

RESULTS: The public expenditure of WASH declined by about 30.7% over the 3 fiscal years, from US $2016 million in 2016 to US $1397 million in 2018. Meanwhile, this expenditure allocated to the poor or mountainous areas increased by 3 folds. The highest proportion of WASH public funding was invested in sanitation through large network systems (59.07% of the total public expenditure), whereas the lowest was in hygiene promotion and handwashing facilities. The domestic budget was still the main source of public financing for WASH services, with 2 largest shares coming from government revenues (47.24%) and repayable loans (20.49%).

CONCLUSION: The main source of financing for WASH was from the government, yet its public expenditure has been decreased. A refined roadmap with specific steps for a sustainable WASH financing system in Vietnam, particularly to leverage government and private sector resources, is required to ensure no one is left behind.

KEYWORDS: Water, Sanitation, Hygiene, WASH expenditure, WASH financing

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CORRESPONDING AUTHOR: Vu Quynh Mai, Centre for Population Health Sciences, Hanoi University of Public Health, Hanoi 700071, Vietnam. Email: vqm@huph.edu.vn

Introduction

Having access to safe and equitable drinking water, sanitation, and hygiene (WASH) has been considered not only as a measure for progress in the fight against poverty, disease, and death, but also as a human right.[1] In a flashback of 20 years ago, roughly 1 of 5 people in Vietnam did not have access to improved drinking water sources. These are the nature design and constructions, such as piped water, boreholes or tube wells, protected dug wells, protected springs, rainwater, and delivered water.[2] Also, about 44.4% of Vietnamese lived with unimproved sanitation facilities, including open defecation and ones not being designed to hygienically avoid contact with excreta.[2] The use of unimproved water sources and sanitation facilities was more alarming in rural areas. In 2000, coverages of rural households using such unimproved services were about 13.5% and 54.2%, whereas those of urban households were about 4.6% and 14.4%, respectively.[2,3]

Vietnam has made a notable progress in improving access to WASH. The political will in prioritizing equitable access to these services came with the launching of the National Targeted Program (NTP) of Water and Sanitation for Rural Development for 2006-2010, and then the NTP of New Rural Development for 2016-2020.[4,5] One of the results of such effort was that the use of surface water has been eliminated by 2016. Moreover, the coverage of people having access to drinking water from at least improved sources, given collection times being less than a 30-minute round-trip with queuing (basic water services and higher level ones), increased from 88.65% to 94.72% of the total population during 2010-2017. The use of at least improved sanitation facilities, which are ones not being shared with other households (basic sanitation services and higher level ones), also significantly increased by 12.5%. Regarding handwashing facilities with water and soap on premises (basic hygiene services), more than 85% of the total population having access to such facilities was maintained throughout this 2010-2017 period.[2] The progress of providing improved drinking water and sanitation services in Vietnam was highly recognized and acknowledged internationally.[6-8]

Nevertheless, the country has still been facing inequitable access to WASH services. The World Bank reported that only 47% of the ethnic minorities had access to basic drinking water and only 45.3% to basic sanitation, whereas 89.4% of the

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majority (Kinh) could access the latter.[9] People of the richest group no longer practised open defecation, yet this issue still remained among 19% of the poorest ones.[2] Geographically, coverages of clean water and sanitary toilet were still low among mountainous (about 60%) and riverside provinces (about 47.6%) in 2010.[6] After a decade of implementing the NTP on rural development, the disparity of people exercising toilet sanitation between urban and rural areas was narrowed, yet still large. By 2017, about 2.4 million people living in rural areas still practised open defecation, compared with 500 000 people in the urban areas.[2] These gaps between different population groups accessing WASH services, by location, socioeconomic status, and cultural and ethnic characteristics, have been shown to be apparent.

Owing to the fact that WASH has no longer been placed in a distinct NTP since 2016, funding cuts from the government are clearly inevitable. In addition, donation, concessional finance (eg, from Official Development Assistance [ODA]), and sovereign-guaranteed loans from development banks will be less frequently offered because Vietnam has become a low middle-income country.[10] This could be seen in the support of Vietnam from the Australian government being cut by 40% in May 2015 or from the United Kingdom even being phased out.[11,12] This decline in the total budget may also affect the sustainability of WASH funding. So in the present time, a blended financing model for WASH has been highly encouraged.[13] Since 2004, Vietnam has implemented a preferential credit policy for the poor to construct improved water sources and sanitation facilities on their premise.[14] The source of funding for this preferential credit programme was mainly from the government, which implied that there could be future contributions from commercial banks, enterprises, and other societal actors.

By mid-year of 2019, Vietnam's Prime Minister declared the national roadmap towards the Sustainable Development Goals (SDGs) number 6 by 2030, in which section 6.1 referred to the universal and equitable access to safe and affordable drinking water and sections 6.3 to 6.6 referred to the management and protection of water sources and the ecological system.[15] However, achieving adequate and equitable access to sanitation and hygiene (as in SDG 6, section 6.2) was not mentioned in the Prime Minister's roadmap. Moreover, details of supporting programmes and their financial options under this roadmap have also not been passed on. Descriptions of Vietnam's financial system for WASH were published,[16] yet the evidence on how WASH funding was being allocated/spent was not well documented. Therefore, it is relevant and timely to examine patterns of WASH expenditure in Vietnam for the past years. This piece of evidence would deliver a systematic categorization of the financial allocations for WASH services and its governance system, which can support policy makers during future financial planning. This study aimed to provide patterns of public expenditure of WASH during 3 fiscal years of 2016, 2017, and 2018 in Vietnam.

Methods

This is a cross-sectional study reflecting information about WASH public financing at both national and sub-national levels. As a guidance to track the financing for the WASH sector at the national level, TrackFin – being launched by the World Health Organization (WHO)[17] – was used as a theoretical framework to determine sources of finance for types of WASH services. An activity-based approach was applied to categorize the public financing for WASH by water, sanitation, and hygiene, independently. Focus group discussions with key experts and stakeholders were conducted to identify WASH activities and to access relevant financial reports.

Stakeholder identification

The development of WASH services in Vietnam is of a multi-agency cooperation. Key public stakeholders were determined by reviewing relevant documents, which were NTP on Water and Sanitation for Rural Development (2010-2015), NTP for New Rural Development (2016-2020), and NTP for Sustainable Poverty Reduction (2016-2020).[4,5,18] Fourteen organizations/agencies were identified as stakeholders of WASH services, including (1) Vietnam's Health Environment Management Agency (Ministry of Health), (2) National Centre for Rural Water Supply and Sanitation, (3) Directorate of Water Resources, (4) Department of Finance, (5) Department of Planning and Investment, (6) Office of National Target Programme on New Rural Development (Ministry of Agriculture and Rural Development), (7) Technical Infrastructure Agency (Ministry of Construction), (8) Vietnam Women's Union, (9) Physical Education Department (Ministry of Education and Training), (10) Vietnam State Treasury, (11) Vietnam Water Supply and Sewerage Association, (12) the United Nations Children's Fund, (13) Asian Development Bank, and (14) the World Bank.

Data collection

Focus group discussions among the 14 aforementioned stakeholders were conducted to collect evidence on: (1) WASH-related activities that they carried out during 2016-2018, (2) the amount of budget they raised and the actual spending for these activities, (3) separating sources of funds, and (4) separating sources of funding for each activity. In addition, the budget allocation of WASH activities was accessed through financial reports provided by the participating organizations. These focus group discussions were conducted by the authors themselves, given the consent of the indicated stakeholders for participating and interview recording. Data were managed in Excel Spreadsheet and were analysed using STATA version 14.

Analysis

A cost analysis was conducted under a public provider perspective. Raw expenditures of 3 fiscal years 2016, 2017, and 2018

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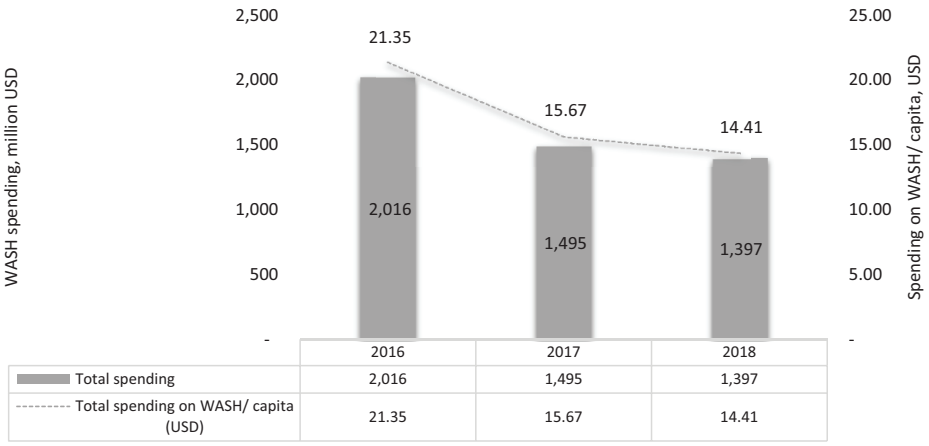


Figure 1. The WASH expenditure in Vietnam, 2016-2018 (million US dollars).
Number of total capita was borrowed from the General Statistics Office of Vietnam. WASH indicates water, sanitation, and hygiene.

were adjusted to 2018 price using the Vietnam's consumer price index.[19] Costs of WASH-related activities were presented in US dollars, with an exchange rate of VND 23 201 per US dollars. The related activities and sources of financing for WASH were grouped following the TrackFin guidance.[17]

Activity-based costing. The WASH services were classified into 4 main groups. The first group was water services, which included water supply through large network systems, basic drinking water supply, protection of water resources, and river basin development. The second one was sanitation services, which included sanitation through large network systems and basic sanitation. The third group was hygiene services, which included hygiene promotion, handwashing facilities, and other hygiene activities. The fourth one was supporting services, which referred to policy, governance, and capacity building. Further details of the WASH services in Vietnam could be found in Supplementary Materials.

Shared cost allocation. The WASH expenditure in Vietnam has not always been allocated directly to specific WASH-related activities or regions, but rather to shared costs. For example, with a particular WASH-related activity, its promotion campaign often combines costs of both sanitation (eg, using latrine) and hygiene (eg, time to washing hands with soap). Accordingly, WASH expenditure would usually be reported in shared costs of several provinces/regions in a lump sum, rather than by geographical areas (mountainous vs lowland) or economic areas (poor vs non-poor). Two approaches to allocate shared costs of WASH were applied in this study. As for WASH-related activities, proportions of direct spending on separate activity groups were used for shared cost allocation. By different types of areas, proportions of direct spending, provided by the Vietnam State Treasury, on mountainous versus lowland areas, and poor versus non-poor areas, were used to allocate the shared costs. A list of mountainous and poor areas[18,20] is provided in Supplemental Table II.

Sources of WASH public expenditure. Sources of WASH public expenditure were categorized as follows: government revenues, government repayable funding (eg, loans, equity, bonds, etc.), government non-repayable funding (eg, international grants to government or non-repayable loans, such as ODA), household loans for constructing WASH facilities, and other sources (from international grants that do not directly go to the government, from investment projects, etc.).

Results

Data collection was carried out from August 15 to October 10, 2019. Evidence was synthesized via conducting focus group discussions of 14 participating stakeholders and via accessing financial reports of their organizations. These data reflected the status of the financing for public WASH services at both national and sub-national levels.

WASH public expenditure

Figure 1 presents WASH-related expenditure during 3 fiscal years of 2016, 2017, and 2018 in Vietnam. The public expenditure of WASH services for these years was US $2016 million in 2016, US $1495 million in 2017, and US $1397 million in 2018. According to annual reports of the total population by the General Statistics Office of Vietnam,[19] the total WASH expenditure/capita was calculated to be US $21.4, US $15.7, and US $14.4 in these fiscal years, respectively. With respect to the gross domestic product (GDP) per capita per year, the spending on WASH accounted for 1.00%, 0.68%, and 0.56% of annual GDP per capita over these 3 years, respectively.

Table 1 presents the expenditure of 4 WASH service groups in Vietnam during 2016-2018, including both direct spending and shared costs of WASH-related activities. Services of sanitation supply in large network systems received the highest amount of investment at 59.07% of the total WASH public expenditure. The spending on hygiene services accounted for 15% of the total public expenditure, followed by clean water

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Table 1. WASH expenditure by types of services in Vietnam, 2016-2018 (million US dollars).

	2016		2017		2018		TOTAL	
	AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%
Total spending	2016	100	1495	100	1397	100	4909	100
Water	333	17	183	12	254	18	770	16
Water supply in large network system	199.74	9.91	46.89	3.14	134.07	9.59	381	7.76
Basic drinking water	123.41	6.12	134.97	9.03	116.91	8.37	375	7.65
Water protection	10.12	0.50	0.82	0.05	3.20	0.23	14	0.29
Sanitation	1406	70	1004	67	787	56	3196	65
Sanitation supply in large network system	1319.85	65.46	905.58	60.58	674.10	48.24	2900	59.07
Basic sanitation	85.70	4.25	98.33	6.58	112.87	8.08	297	6.05
Hygiene	226	11	242	16	273	20	741	15
Hygiene promotion	0.21	0.01	0.19	0.01	0.22	0.02	1	0.01
Handwashing	0.39	0.02	–	–	0.69	0.05	1	0.02
Other hygiene	225.84	11.20	241.48	16.15	272.24	19.48	740	15.07
Supportive activities	50.99	2.53	66.70	4.46	83.19	5.95	201	4.09

Abbreviation: WASH, water, sanitation, and hygiene.

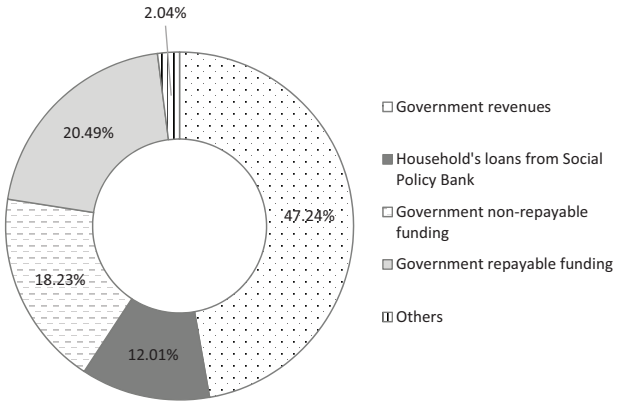


Figure 2. The shares of finance options for WASH in Vietnam during 2016-2018.
WASH indicates water, sanitation, and hygiene.

supply for 7.76%, basic drinking water supply for 7.65%, basic sanitation services for 6.05%, and supportive services (training and guidelines) for 4.09%. The expenditure of hygiene promotion and handwashing was reportedly very low, only comprising 0.01% and 0.02% of the total WASH public spending, respectively. Overall, the public expenditure of hygiene services tended to increase over the period 2016-2018, whereas that of sanitation decreased, despite possessing the largest share of the total WASH public expenditure.

Present financing options

Figure 2 presents Vietnam's WASH funding sources during 2016-2018. Most of the WASH expenditure was from the domestic budget, with the highest share (47.24%) coming from government revenues, followed by 20.49% from the government repayable funding (eg, Government's repayable loans), 12.01% from the Vietnam Social Policy Bank credit to households, and 18.23% from international support sources as non-repayable funds (eg, public grants, ODA) to the government. The remaining 2.04% was from other international support sources for WASH in Vietnam.

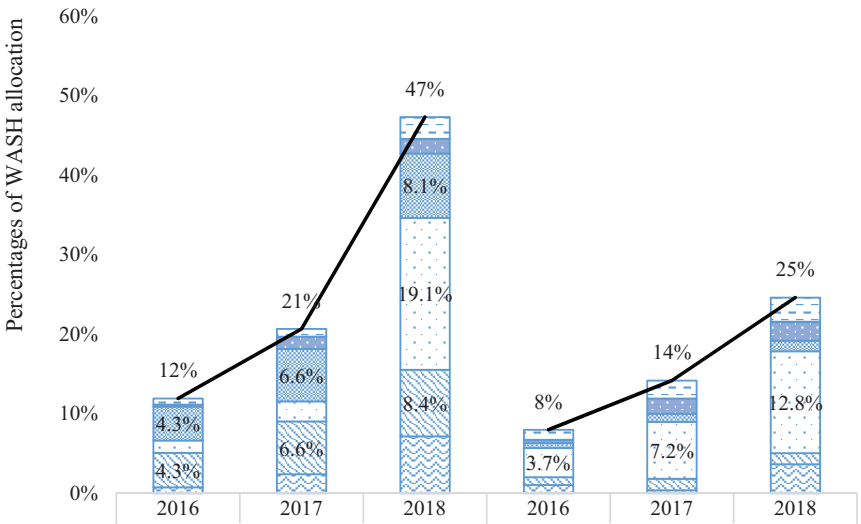
WASH allocations

Figure 3 shows the percentages of spending on WASH among poor versus non-poor areas, and mountain versus lowland areas during 2016-2018. The data shown here include both direct spending and shared costs allocated to different types of areas. Regarding the distribution among poor and non-poor groups, the total WASH public expenditure allocated to the poor increased from 12% in 2016 to 47% in 2018. In other words, the budget being allocated to poor and non-poor groups was relatively equal by 2018. As for regions, the WASH-related budget being allocated to mountainous areas increased from 8% in 2016 to 25% in 2018. The other 75% of the 2018's expenditure was spent on lowland areas. Most of the WASH allocations to poor and mountainous areas focused on improving the hardware, which included 19.1% and 12.8% of large network systems for sanitation, and 7.2% and 3.7% for water supply in 2018.

Discussion

This study provided an overview of WASH public financing in Vietnam during the 3 fiscal years of 2016, 2017, and 2018. To

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	Allocating to Poverty areas (compare with non-poor)			Allocating to Moutainous areas (compare with low-land)		
	2016	2017	2018	2016	2017	2018
Other hygiene	0.8%	1.0%	2.7%	1.3%	2.3%	3.0%
Handwashing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hygiene promotion	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Supportive activities	0.2%	1.6%	1.8%	0.4%	1.9%	2.3%
Basic sanitation	4.3%	6.6%	8.1%	0.6%	1.0%	1.3%
Sanitation in large network systems	1.6%	2.5%	19.1%	3.7%	7.2%	12.8%
Basic drinking water supply	4.3%	6.6%	8.4%	1.0%	1.5%	1.4%
Water supply in large network systems	0.8%	2.4%	7.2%	1.0%	0.4%	3.7%
Total allocating to poor areas	12%	21%	47%			
Total allocating to moutainous areas				8%	14%	25%

Figure 3. The shares of WASH allocations by sub-groups, 2016-2018.
Percentages of WASH allocation to non-poor areas were equal to 100% – % in poor areas. Percentages of WASH allocation to lowland areas were equal to 100% – % in mountainous areas. WASH indicates water, sanitation, and hygiene

the best of our knowledge, this is the first study in Vietnam to use TrackFin – a scientific methodology to identify and track the financing for WASH sector.[21] We expect our findings to support Vietnamese policy makers in their budgeting decisions on WASH for the next period 2020-2025 and also to be a good example for other countries in applying the TrackFin methodology to manage and monitor their WASH financing system.

Overall, the total public expenditure of basic WASH-related activities in Vietnam decreased by 30.7% over the past years of 2016-2018. Nevertheless, this public budget for WASH allocated to the poor or mountainous areas increased by 3 folds. The investment was focused on large network systems, such as urban wastewater treatment and sewerage systems, at 59.07% of the total public WASH expenditure. During the 3-year period, more than half of the public WASH expenditure was from the government revenues.

Two main reasons for the expenditure reduction were provided in the technical validation workshop with key policy makers on November 5, 2019. First, some national targets of Vietnam were in their transition during the 2016-2018 period, which resulted in the subsidization for WASH activities being reduced and allocated to other sectors (ie, transport and communication, technology, and science). Second, small-scale investments in WASH services were preferable than large-scale ones during this time, due to the government's need for sustainability and effectiveness assessments to be conducted before further investing.

Regardless of the significant reduction in WASH expenditure during recent years, the government has maintained efforts to ensure the equitable access to WASH services. This study highlighted that WASH funding for disadvantaged groups (those living in poor, remote, ethnic, border, and island areas) had been increased significantly over the past 3 years. However, the number of people practising open defecation was still large in such vulnerable groups, which may suspect the efficiency of WASH allocations, especially among ethnic minority groups (EMGs).

A previous study found 2 main reasons for the low coverage of WASH among EMGs. First, it could be due to a lack of WASH services being prepared for geographical and economic difficulties in highland and remote areas.[22] In response to this issue, most of the WASH funding was allocated to constructing water, sanitation facilities, and hygiene system in these vulnerable areas, because this is a straightforward strategy of the

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government to ensure the preparedness and sufficiency of WASH services and, also, to increase the overall access to quality WASH services. Second, the EMGs' cultural perception of exempting from the use of hygienic latrines appeared to partially explain their low access to WASH services.[22] Meanwhile, the spending on interventions of hygiene behaviour change and promotion had been limited, as our findings indicated that less than 1% of WASH spending was on hygiene promotion. Therefore, WASH promotion programmes should be implemented with consistency and with empowerment principles to improve hygiene practices and to strive for the long-term participation and initiatives of a community in such practices, especially the disadvantaged ones.

The disaggregated fund for hygiene services has also been of concern in many countries. Findings from the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) survey in 2017 showed that only 6 of 52 countries were having a sustainable fund from the government for hygiene promotion, and Vietnam was among those having no government disaggregated fund for this matter.[23] In the follow-up 2019 GLAAS survey, the attention to hygiene through funding allocations was still not well emphasized, as only 4% of the investigated countries had sufficient funds for their national targets.[24] As this is considered an alarming issue, the United Nations (UN) has recommended countries to upgrade their WASH financial tracking system for more efficient WASH funding allocations.[24]

The World Bank has introduced capital cost estimations for 140 countries to achieve universal coverage according to SDG 6 section 1, in which costs of WASH included planning and supervision, hardware, construction, house alteration, protection of water sources, education, and behavioural change.[25] The estimation for Vietnam was US $132.5 per capita per year to achieve universal coverage of basic WASH services (accessing improved sources of WASH within less than 30 minutes of collecting time) and about US $378.3 per capita to achieve universal self-managed WASH services (access to improved sources of WASH located on premises).[25] In this study, the public WASH expenditure per capita in Vietnam was US $14.41 in 2018, which was comparable to that from other low middle-income countries such as Kenya at US $11.83 and Kyrgyzstan at US $15.74.[24-26] It has been apparent that the current public expenditure for WASH in Vietnam is still very far from the World Bank's estimation for universal coverage of either basic or self-managed WASH services. Together with the overall decreases in the public funding on WASH, this could be a barrier for Vietnam to achieve the targets for safe water and improved sanitation for all by 2030.

To cope with shrinking resources, domestic commercial financing may need to be mobilized from local financial markets and may also be an adjunct to government and private funding resources. A market-based approach to promote sanitation and water programmes being adopted in Africa showed promising results.[27] The development, finalization, and implementation of a roadmap towards SDG 6 by 2030 would require the participation of all relevant stakeholders, including ministries, private sector, and other international organizations. In this regard, a blended financing modality can be consulted to achieve a sustainable WASH financing system. This is a strategic use of development finance to mobilize additional funds for the sustainable growth of emerging markets. The use of blended finance has also been well documented.[16]

Several limitations were encountered when conducting this study. First, limited budget and time meant this study could only focus on public financing for WASH during 2016-2018 in Vietnam. As the private funding and household spending were not examined, as well as a limitation in time scope, the overall picture of WASH financing has yet to be comprehensive. Second, as the state's accounting systems in Vietnam do not function in separation for budget and expenditure by subsectors of WASH services, there were just lump-sum WASH finance–related numbers. Thus, statistical techniques used to allocate WASH expenditure could result in uncertainty to some extent. Finally, it was not possible for current accounting systems to provide precise figures on all WASH expenditure, so the collected data may not have reflected all the WASH public expenditure in Vietnam. In the context of Vietnam embarking on its strategy and planning for 2021-2030, it is in need of well-thought-out action plans, financial management system, as well as monitoring and evaluation framework of Vietnam's SDGs regarding specific WASH indicators. This can allow the government to keep track of the country's progress towards SDG 6 about WASH, especially for hygiene and sanitation. Also, revising, and if necessary, amending the inter-sectoral coordination mechanisms for WASH monitoring and reporting are also advised.

Conclusion

Overall, the total public expenditure on basic WASH-related activities in Vietnam was decreased during the past years of 2016-2018. Moreover, the investment in WASH-related health promotion (eg, sanitation and hygiene promotion, social behaviour change programmes) is still in shortage. Hence, a refined roadmap with specific steps, milestones, and timelines for the sustainability of WASH financing in Vietnam, particularly to leverage government and private sector resources, shall require the most adequate, equitable, and efficient manners to ensure no one is left behind.

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Author Contributions

VQM and HVM devised the study, the main conceptual ideas and proof outline. VQM and HTNA carried out the data collection. VQM carried out the data analysis and took the lead in writing the manuscript. All authors provided critical feedback and helped shape the manuscript.

Ethical Considerations

Written consent forms were obtained from participants before interviews, and the consent forms were stored at the Hanoi University of Public Health.

ORCID iD

Vu Quynh Mai https://orcid.org/0000-0001-6962-0564

Supplemental Material

Supplemental material for this article is available online.

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