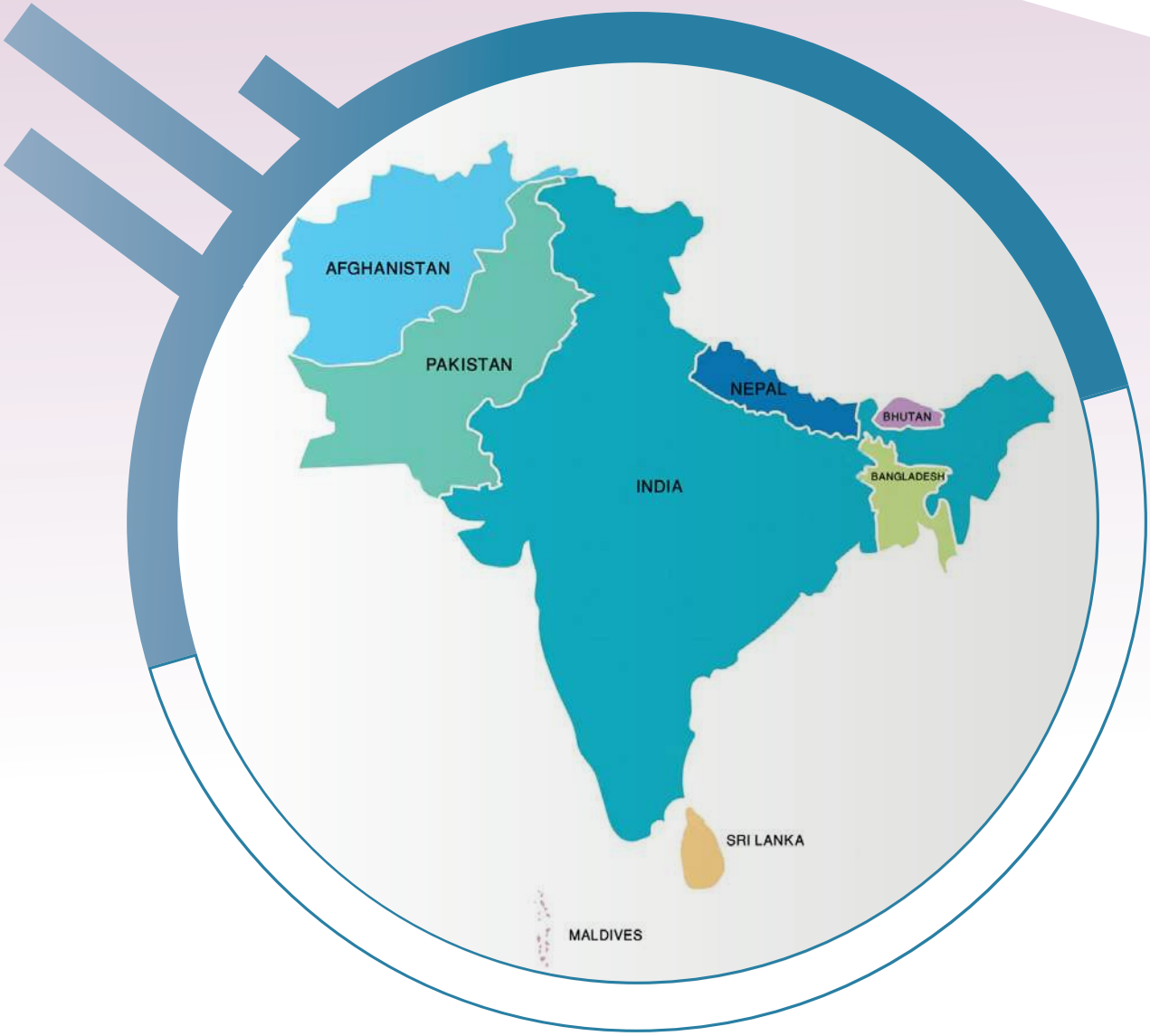
Freshwater Action Network South Asia



Review of Sector Investment in WASH in South Asia: A Synthesis Report

July 2024

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Contents

1 Introduction 1

1.1 Objective 2

1.2 Scope 3

1.3 Analysis methodology and report structure 3

2 FANSA project country overview 6

3 Synthesis 12

3.1 Cross cutting challenges 12

3.1.1 Insecurity and instability 12

3.1.2 Sector capacity 13

3.1.3 Political interference, corruption, graft, nepotism 15

3.1.4 Inter-sectoral coordination and coherence 15

3.2 WASH vision and strategies 16

3.2.1 Meeting the WASH SDGs -national cross party priorities 16

3.2.2 Budget allocation priorities and mechanisms 20

3.2.3 Ignoring the rest of the sanitation chain 26

3.2.4 Schools, health care and public facilities 28

3.2.5 Ensuring sustained services – O&M 28

3.2.6 Water competition 29

3.3 Current WASH funding sources 30

3.3.1 Domestic or foreign sources 30

3.3.2 Government vs private WASH service provision 32

3.4 Equity and Accountability 34

3.4.1 Targeting the unserved 35

3.4.2 Creating demand, public accountability 38

3.4.3 Performance competition 40

3.5 Optimising existing assets 41

3.5.1 Data 41

3.5.2 Utilisation of funds 46

3.5.3 Improve operational efficiency of WASH services 49

3.5.4 Regulation capacity 54

3.6 Future-proofing the WASH sector 55

3.6.1 Changing service levels 55

3.6.2 Technology and innovation 58

3.7 Alternative finance sources 59

3.7.1 Existing revenue sources 59

3.7.2 Innovative financing 59

4 Conclusion 61

4.1 Cross cutting challenges 61

4.2 WASH vision and strategies 62

4.3 Current WASH funding sources 63

4.4 Equity and Accountability 64
4.5 Optimising existing assets 65
4.6 Future proofing 66
4.7 Alternative finance sources 67
4.8 Summary 67
4.9 Unpacking the MaxQDA data 69
5 References 71
5.1 FANSA country 2023/2024 Sector Investment Review reports 71
5.2 Bibliography 71
6 Annex 72
6.1 Country recommendations 72
6.1.1 Bangladesh 72
6.1.2 Bhutan 73
6.1.3 India 74
6.1.4 Maldives 75
6.1.5 Nepal 76
6.1.6 Pakistan 76
6.2 Qualitative Data Analysis codes and keywords 76
6.2.1 Limitations 78
6.2.2 Coding analysis results 78

List of Tables

Table 1: Detailed information provided in country reports (yes✓, partially ~, no×) 4
Table 2: UN Water Indicator 6.5.1 Degree of integrated water resources management implementation 7
Table 3: The investment gap to SDG 6 by 2030ODA 8
Table 4: WASH related ODA 8
Table 5: Activities captured/ aligned in national WASH plans 9
Table 6: Staff ratios 2011 14
Table 7: Multi-stakeholder coordination mechanisms 16
Table 8: Expenditure gap for water supply and sanitation infrastructure (2021) 17
Table 9: A regularly reviewed, government-led national plan for WASH is in place and implemented 18
Table 10: Gap Analysis 25
Table 11: Equity in sanitation: specific measures in finance plans to target vulnerable populations 35
Table 12: SWA Behaviour 3-Information and mutual accountability platforms 39
Table 13: Clean Green Pakistan's KPIs for 4 WASH related "pillars" 40
Table 14: Availability of financial data81 43
Table 15: Unit Cost Data - US$ (2010/ 2015) 44
Table 17: Strengthen and use of country systems 46
Table 18: Financial sustainability95 49
Table 19: IBNET Water Supply and Sanitation Performance Indicators 52
Table 20: GDP share of agriculture - Country rankings 63
Table 21: Themes, codes and keywords 77
Table 22: Report coverage of topics by country disaggregated for(+ve and -ve mentions) 79

List of Figures

Fig 1: Key Principles to Deliver CWIS 2
Fig 2: 2023 Global Water Security Assessment extracts 6
Fig 3: National water security scores ranked for the Asia-Pacific. Scored by 10 components 6
Fig 4: Corruption perception index 7
Fig 5: Political stability Index 7
Fig 6: Public and private expenditure for water supply and sanitation 10
Fig 7: Annual WASH expenditure by funding type 10
Fig 8: Annual WASH expenditure by subsector 10
Fig 9: Non-revenue water 11
Fig 10: Potential sources of funding and financing for water-related investments 11
Fig 11: Inflation rates 12
Fig 12: WASH budget allocations by source, expenditure – Bhutan 2018-2023 23
Fig 13: Maldives central government expenditure on waste water and water supply 26
Fig 14: Sri Lanka fund allocations for major projects 27
Fig 15: Nepal- WASH funding sources 2019-2024 Pokhara & Hetauda (NPR m) 31
Fig 16: Status of Institutional Sanitation- India 37
Fig 17: CGPI 1st phase, Khyber Pakhtunkhwa city scores 2020 40
Fig 18: BLSS 2022, Distribution of Households by Type of Toilet by Extent of Sharing with other Households (in %) 42
Fig 19: NWSDB water unit and monthly rates in LKR100 53
Fig 20: Seasonal shipped water supply unit cost- Maldives107 57
Fig 21: Relative occurrence of topics across all reports (+ve and -ve) 69
Fig 22: Report coverage of topics by country (combined +ve and -ve mentions) 69
Fig 23: Cycle of thematic analytic (adapted from Braun & Clarke) 76

Acronyms

ADB	Asian Development Bank
BCC	Behaviour Change Communication
CBO/ CSO	Community Based Organisation/ Civil Society Organisation
CIF	Climate Investment Funds
CWIS	City Wide Inclusive Sanitation
DEWAT	Decentralised Water Treatment
DHS	Demographic and Health Surveys
DPHE	Department of Public Health Engineering (Bangladesh)
FANSA	Freshwater Action Network -South Asia
FC	Finance Commission (India)
FGD	Focal Group Discussion
FSM	Faecal/ Fecal Sludge Management
GLAAS	Global Analysis and Assessment of Sanitation
GP	Gram Panchayat
HCFs	Health Care Facilities
HR	Human Resources
IWRM	Integrated water Resource Management
LDC	Least Developed Country
LGE&RDD	Local Government, Elections & Rural Development Department (Pakistan)
MHM	Menstrual Hygiene Management
MICS	Multiple Indicator Cluster Surveys
MIS	Management Information System
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organisation
NWSDB	National Water Supply and Drainage Board (Sri Lanka)
O&M	Operation and Maintenance, activities as well as costs. O&M is also used in this report to refer to financially sustainable service models, be they public, private or community.
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OHS	Occupational Health and Safety
PHED	Public Health Engineering Department (Pakistan)
PRI/RLB	Panchayat Raj Institutions and Rural Local Bodies s(India)
SAARC	South Asian Association for Regional Cooperation
SDGs	Sustainable Development Goals
SIDS	Small Island Developing State
STP	Sewage Treatment Plant
SWA	Sanitation and Water for All
SWM	Solid Waste Management
WASA	Water Supply and Sewerage Authority (Bangladesh)
WASH	Water Supply, Sanitation and Hygiene
WB	World Bank Group/ IDA
WS	Water Supply
WSSC	Water and Sanitation Services Company (Pakistan)
WTW	Water Treatment Works
WWTW	Waste Water Treatment Works

Acknowledgement

Preparation of a synthesized report on the sector investment status review in FANSA operating countries in South Asia entails documenting the status and gaps regarding the financial investment in achieving SDG 6.1 and 6.2 for Safely Managed Services in the region. This document serves as a foundation for policy makers, professionals, and practitioners to effectively allocate the financial resources in the sector to enable the sector environment for accelerated progress in achieving the committed targets envisaged by SDGG 6.1 and 6.2 by the respective countries in South Asia.

The FANSA extends its sincere appreciation to the FANSA national chapters (Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka), particularly their National Convenors and Project Coordinators for their dedication and tireless efforts in conducting the sector investment status review in their respective countries.

Similarly, we also extend our sincere gratitude to all the stakeholders of the respective countries for generously sharing their insights, expertise, and experiences, which have been crucial in shaping and completing this study. Likewise, Individuals, institutions, practitioners, and sector professionals in the respective countries across SA Region were instrumental for their knowledge, expertise, and time during the review study period.

The FANSA is thankful for the support provided by the Sanitation Water for All (SWA) and the Bill & Melinda Gates Foundation. Without their techno financial support, and continuous guidance, FANSA secretariat team tougher with the support and dedication from its National Chapters in the SA Region, this achievement would not have been possible.

The FANSA believes this synthesized report marks a significant step toward equitable, and inclusive sector investment with increased allocation of resources to meet the needs of the sector investment in meeting the SDG targets to benefit all with safely managed water and sanitation services. FANSA further believes that this report contributes to enable the sector policy environment for attracting more resources in the sector from the government, non-government, private and development partners within the countries, SA region and from the global arena. This will further help in achieving Sustainable Development Goal 6 (SDG-6) and setting the stage for sustainable WASH services in the South Asia Region.

Best,
FANSA Secretariat Team,
September 2024

1 Introduction

The Water, Sanitation and Hygiene (WASH) sector in FANSA national chapters in South Asia faces significant challenges in ensuring access to sanitation and water, affecting public health, economic development, and environmental sustainability. To address these challenges, comprehensive policies and substantial investments in the Water, Sanitation, and Hygiene (WASH) sector are crucial. South Asian countries i.e. Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka, where FANSA is operating through its National Chapters has undertaken reviews of their policies on sanitation and investments in the WASH sector in the pursuit of achieving the country's commitments towards SDG 6.1 and 6.2. To achieve SDG 6.1 and 6.2, the current trend of investment in WASH by the countries in South Asia is not sufficient and lags far behind than what has been estimated needs for achieving the commitments made by the countries to achieve their respective SDG 6 targets by 2030. Besides, allocation and efficient utilization is also another gap in the sector. Such a financial gap, underutilization of allocated budget and weak targeting of resources hinder the achievement of sustainable and universal WASH access (and therefore the SDG 6), thereby contributing to leave poor and vulnerable population behind the last mile of services by 2030.

This is the synthesis report commissioned by FANSA, of Sector Investment Status Review reports produced by seven FANSA National Chapters (as mentioned above) under its Rising for Rights (R4R): Strengthening Civil Society Network in South Asia to contribute in Achieving SDG 6 (simply Rising for Rights i.e. R4R) project. The Rising for Rights (R4R), which is a three-year grant project from Bill & Melinda Gates Foundation, is commenced in 2023 and is now being executed in all its national chapters in South Aisa, except Afghanistan. The project outcomes are:

The outputs and activities under each outcome of this R4R project will be anchored by respective member countries (National Chapter) of FANSA with the support from the FANSA Regional Secretariat, currently operating in Nepal.

This report provides a regional overview of the WASH sector investment status, aiming to benefit a wider audience within the sector.

1.1 Objective

While synthesizing the sector investment status review reports of the FANSA national chapters operating currently in seven countries (Afghanistan is halted for time being) of South Asia, it is essential to assess, review and evaluate various aspects related to the sector financing endeavours in WASH to inform policy decision-makers, improvements in the current trend of financing mechanism and trends to achieve better outcomes in water, sanitation, and hygiene services.

Similarly, while analysing the collected information during the sector investment status review exercise in the countries, the review, analysis and interpretation of the existing status were done considering the different lenses for promoting safely managed services.

In this report "funding" refers to sources from which national/ federal government acquires resources, and "budget" refers to monies assigned to local levels. It is assumed that, in general, local levels do not access official development assistance directly, but through federal agencies.

The objective of the country Financing Mechanism reports was to "review the financial strategies and mechanisms in place to support WASH programs. Along with the financial sources, assess and review the adequacy, efficiency, and sustainability of funding sources, including public budgets, external aid, and innovative financing approaches.

Similarly, it is not only enough to review the funding sources, but also equally important to assess and review the allocation of these financial resources for implementing the WASH policies and relevant programs developed accordingly. Likewise, it is necessary to evaluate budgetary provisions, funding mechanisms, and the availability of skilled personnel to determine whether resources are sufficient and appropriately utilised. The assessment and analysis need to be done both at the national and sub-national and local (government) level to understand the fund flow mechanisms and arrangements."

Fig 1: Key Principles to Deliver CWIS[1]

The primary objective of this WASH sector investment status review study across the FANSA national chapters in South Asia was "to generate financial information for informed decision in financing in the WASH Sector in general and Sanitation Sub-sector in particular to enhance equity and inclusivity in water, sanitation, and hygiene (WASH) services and achieve Safely Managed Water and Sanitation Services."

Besides, this review study also aimed at identifying the prevailing gaps in the sector investment, policy provisions etc. to pave the way towards achieving the SDG commitments made by the respective countries by 2030.

However, the objective of this synthesis report is to identify areas of country overlap, gaps and synergies to:

- Evaluate financial resources and funding mechanisms
- Assess human resources and capacity building efforts
- Analyse budget utilisation and efficiency

The synthesis report, therefore,

- Focuses on the consolidation of the seven reports from each country on WASH sector investment status reviews.

1 citywideinclusivesanitation.com/key-principles-to-deliver-citywide-inclusive-sanitation

- Focuses on municipal/urban investment in Water Sanitation and Hygiene (WASH) and analyzing the current trends and situations as reported in the studies by the FANSA national chapters.
- Notes some areas on which the country reports were silent, but which are objectives of SSMS and CWIS
- Provides recommendations for regional collaboration and knowledge sharing particularly on actions in the WASH sector for increased investment with efficient utilization of the resources to minimize the financing gaps in achieving SDG 6.1 and 6.2.

1.2 Scope

Since our main interest is funding for CWIS and SSMS, our focus is urban WASH, however definitions of 'urban' vary from country to country[2]:

- India: Towns (places with municipal corporation, municipal area committee, town committee, notified area committee or cantonment board); also, all places having 5000 or more inhabitants, a density of not less than 1000 persons per square mile or 400 per square kilometre, pronounced urban characteristics and at least three fourths of the adult male population employed in pursuits other than agriculture
- Maldives: Malé, the capital.
- Pakistan: Places with municipal corporation, town committee or cantonment.
- Sri Lanka: Urban sector comprises of all municipal and urban council areas.

A recently agreed definition, the Degree of Urbanisation, identifies settlements as below[3]:

- Cities consist of contiguous grid cells that have a density of at least 1500/ km2 or are at least 50% built up. They must have a population of at least 50000.
- Towns and semi-dense areas consist of contiguous grid cells with a density of at least 300/km2 and are at least 3% built up. They must have a total population of at least 5000.

1.3 Analysis methodology and report structure

A qualitative data analysis (QDA) software was used to code and analyse the 8 reports. Codes and keywords are included in this Annex. Some of the relevant keywords for each theme are noted next to the subheadings of this report. The MaxQDA findings[4] directed the conventional synthesis, ensuring any significant issues were not omitted.

QDA coding has an inherent element of overlap, so while readers may not always agree with the headings under which issues have been assigned, they should find that the critical issues are addressed elsewhere.

The countries took quite different approaches to the assignment and presented a variety of issues, often not overlapping. There are also differences between the countries' use of terminology, particularly 'sanitation' when it is not clear what exactly is being referred to; toilets, or the whole sanitation chain from toilets to treatment, and whether or not it includes solid waste. Conversely 'WASH' sometimes appeared to be used only in connection to water supply. This is an issue that needs to be addressed by FANSA to ensure clear communication between and about country progress, as well as for targeting budgets and interventions.

There was a general inability to identify urban budgets and expenditure, or separate WS, sanitation, hygiene, solid waste management (SWM) and faecal sludge management (FSM). Principles for tariff setting and other charges were not shared by any country, to demonstrate how cost recovery was balanced with protecting basic service levels for the poor. No country discussed cost recovery for capital expenditure of infrastructure. As a result, the report draws on a variety of online international and country sources.

2 unstats.un.org/unsd/demographic/sconcerns/densurb/defintion_of%20urban.pdf
3 OECD/ EC , 2020, Cities in the World: A new perspective on urbanisation – developed by European Union, Food and Agriculture Organisation of the United Nations, the International Labour Office, Organisation for Economic Co-operation and Development, United Nations Human Settlements Programme, and World Bank.
4 Refer Annex 7.2.2 for coding structure and findings

Table 1 below provides an overview of some of the issues that the country(s) considered

	Up to date data?	Shares actual % fund allocation to urban WS, San, SWM, FSM, hygiene	Mentions efficiency of urban WASH budget utilisation	Recommends free/ subsidised services	Assume privatisation is the solution	Mentions user labour/ O&M	Shared basic data on connections, NRW/ bill collection for different urban WASH services	Shared tariffs/ charges for different urban WASH services	Budget estimate to meet urban WASH SDGs	Specific unserved urban WASH groups identified	Specific urban WASH climate mitigation interventions	Urban WASH service/ financial accountability mechanisms
Bangladesh	2016-2022	~	✓	✓	✓	✓	×	×	✓	~	~	×
Bhutan	2018-2023	~	✓	✓	×	✓	×	×	✓	×	×	×
India	2021-2023	~	✓	×	×	✓	✓	×	×	×	×	×
Maldives	2017-2020	WS/ waste water	✓	×	×	✓	×	×	✓	~	✓	×
Nepal	2018-2023	~	✓	×	×	×	×	~	✓	×	×	×
Pakistan	2021-2023	~	✓	✓	✓	✓	KP WWSCs	Av HH monthly cost -PHED/ WSSC	×	×	~	×
Sri Lanka	2021-2023	Planned only	✓	✓	×	✓	✓	×	✓	~	×	×

Table 1: Detailed information provided in country reports (yes✓, partially ~, no×)

Bangladesh highlighted unserved populations, presented some of the policy guidance that exists to address the WASH needs of those populations, calculated the theoretical funds needed nationally to meet SDG6 by 2030 based on current information. Bangladesh did not discuss fund sources nor allocation and disbursement mechanisms, and there was limited disaggregated data for WS, sanitation, SWM and FSM.

Bhutan's data did not enable the situation for urban contexts to be identified, nor separation of sanitation, SWM and FSM budgets and expenditures. Information on tariff setting principles was not shared, nor data on revenue spread, NRW, bill collection, nor specific identification or targeting of service inequalities or interventions to sustains safely managed systems. Limited info on institutional facilities, school, health centres etc.

As for the Policy review, **India**'s report only addressed rural areas making the funding information shared difficult to synthesis with the reports from the other FANSA countries. The terms urban, city, town, population density are not found anywhere in India's report, but refers rural (key findings bullet 1). However, based on the 2020 OECD/ EC definition of towns, the average population of the 50 Gram Panchayats in India's report meets the minimum 5000 threshold, although insufficient information was shared to confirm population density of> 300/km2.

Maldives outlines various data on revenue and expenditure, but data is not aligned and not disaggregated for urban: rural. The proportion of official development assistance is not entirely clear. Although costs incurred during seasonal water shortages is mentioned, specific initiatives to address unserved communities is not.
Nepal highlights fiscal transfer funds from the federal to subnational governments, expenditure against requirement and utilization against allocated fund which is very low, proportion of costing for Water Supply, Sanitation, WASH in HCF and WASH in Schools, and public places. It does not cover analysis of financing by users, private sectors, and I/NGOs. It does not cover analysis about how allocated budget was utilized for unserved communities.

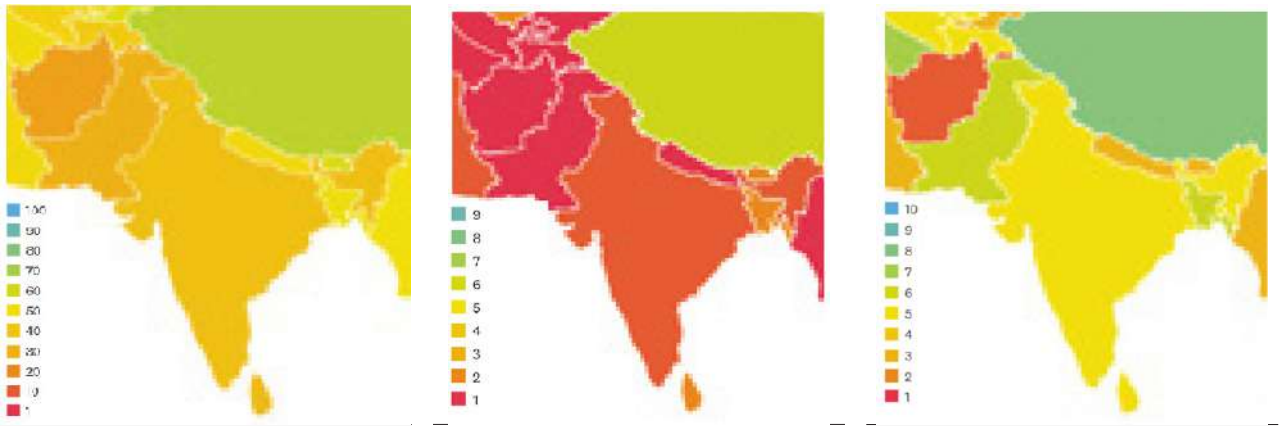
Pakistan **Khyber Pakhtunkhwa** outlined present sources of public funds, provincial water supply fund allocations for the last 3-5 years (detailed identification of other WASH subheads was not always possible), tariff levels and indication of fund utilisation. Khyber Pakhtunkhwa mainly presented water supply information, and information for urban activities was not clearly identifiable. Although **Balochistan, Pakistan,** presented budget data on other WASH activities, they also did not share details of tariff, charges and licences, water use efficiency, NRW, bill collection etc. Although they suggest that budget allocations need to increase, no estimate of the funds needed to meet the SDGs was made. Neither province identified particular groups which need targeting to achieve the SDGs.

For **Sri Lanka** the key challenge is the country's financial crisis, yet despite this the National Water Supply and Development Board, which also provides sewerage and FSM, is performing as professionally as one might hope. National Water Supply and Development Board was the only organisation for which clear tariff information could be located.

Therefore, to facilitate readers to better understand the comparative contexts, the report begins by presenting some relevant issues from international sources.

2 FANSA project country overview

This section provides comparative data for the purpose of understanding the relative contexts of the FANSA project countries.[5] The risks of failure to conserve fresh water, particularly ground water, are highlighted by various metrics including national water security (Fig 2a), water stress or impact of flooding on GDP (Fig 3). However, despite this information responsible water use remains an aspiration, as indicated by water use efficiency and water governance scores (Fig 2b and c).



a. National water security mapped globally, based on a score of 1-100

b. National scores for water value scored based on water use efficiency

c. National scores for water governance based on IWRM implementation

Fig 2: 2023 Global Water Security Assessment extracts[6]

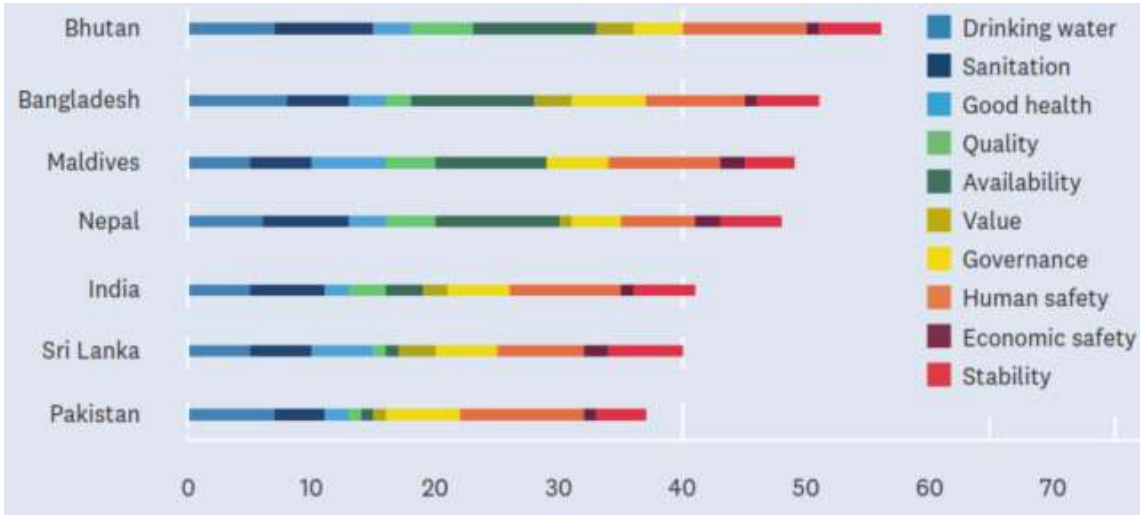


Fig 3: National water security scores ranked for the Asia-Pacific. Scored by 10 components[7]

5 Main sources for this section include OECD 2021 Environment Working Paper No. 171, SWA Country Profiles and Collaborative Behaviour Profiles. (accessed at www.sanitationandwaterforall.org)
6 Figure A and Map 6 &7 extracts from 2023 Global Water Security Assessment, UN, 2023
7 Figure 17, extract from 2023 Global Water Security Assessment, UN, 2023

For funding, corruption perceptions (Fig 4) as well as political (Fig 5) are also relevant.

Financing the SDGs will require a holistic approach, beyond the confines of WASH sector actors.

Fig 4: Corruption perception index[8]

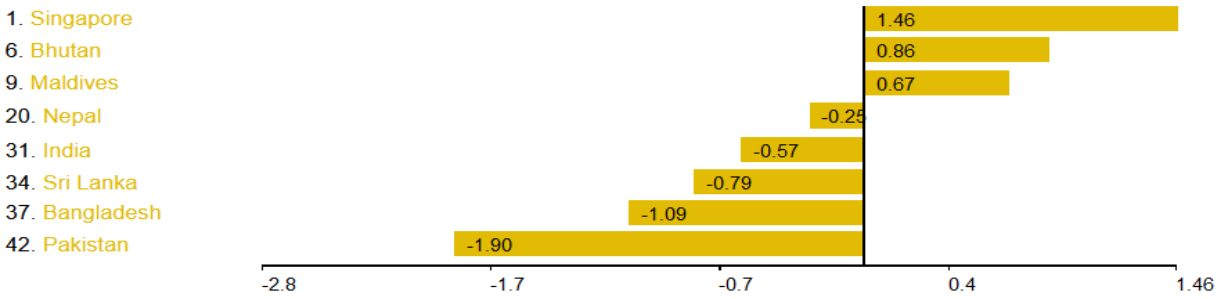


Fig 5: Political stability Index[9]

With respect to governance, UN Water monitors various water related indicators, including *"Degree of integrated water resources management implementation[10]".* The country scores (out of 100) for the four components of IWRM are shown in Table 2.

	Enabling Environment			Institutions and Participation			Management Instruments			Financing		
	2017 baseline	2020	2023	2017 baseline	2020	2023	2017 baseline	2020	2023	2017 baseline	2020	2023
Bangladesh	50	59	66	49	60	67	56	61	67	45	50	57
Bhutan	-	36	-	-	27	-	-	38	-	-	32	-
India	36	41	76	24	39	76	38	63	76	32	37	73
Maldives	40	48	53	53	49	46	29	31	39	20	40	60
Nepal	23	27	37	49	51	40	27	36	41	33	32	30
Pakistan	67	61	76	51	60	67	41	49	54	40	53	55
Sri Lanka	16	53	53	36	64	63	26	40	49	23	32	32

Table 2: UN Water Indicator 6.5.1 Degree of integrated water resources management implementation

We see that all countries have generally made improvements since 2017, however Maldives, Nepal and Sri Lanka still score medium-low overall, Bangladesh and Pakistan score medium-high and only India scores high. There is no 2023 data for Bhutan, which scored medium-low in 2020[11].

Table 3 shows estimated total investment required by each country to achieve the water and sanitation SDGs by 2030 and compares them to current official development assistance (ODA) levels. These estimates include cost of labour and materials and are adjusted for spending efficiency and corruption. Nepal, Pakistan and Bangladesh all have water supply and sanitation investment needs of greater than USD250 per capita per year. Nepal and

8 Adapted from www.transparency.org/en/cpi/2022
9 Extracts from www.theglobaleconomy.com/rankings/wb_political_stability/Asia/
10 www.unwater.org/our-work/integrated-monitoring-initiative-sdg-6/indicator-651-degree-integrated-water-resources
11 iwrmdataportal.unepdhi.org/country-reports

Pakistan both require >2% of GDP, over 1000 times their current per capita ODA. The scale of the challenge should not be underestimated.

OECD write that *"achieving universal access to safe water supply and sanitation services will require much more than a one-off injection of capital; operations and maintenance of existing and new-built assets represent a significant share of total expenditure needs"*[12].

	WASH budget (% GDP)	x-fold increase in expenditure required	Current WASH Budget		Investment needed to achieve SDG 6.1+6.2 by 2030	
Country			US$ per capita	as % GDP	Per capita US$	% of GDP
Bangladesh	0.3%	4.0	4.86 (2017)	0.32%	265	1.3%
Bhutan	0.7%	1.8	20.05 (2018)	0.65%	n.d.	n.d.
India	0.2%	3.7	2.53 (2017)	0.15%	215	0.9%
Maldives	0.4%	-	89.65 (2017)	0.80%	120	0.5%
Nepal	1.9%	2.4	11.55 (2019)	1.39%	600	2.7%
Pakistan	0.2%	4.7	-	-	460	2.3%
Sri Lanka	0.2%	1.5	18.22 (2018)	0.44%	230	1.1%
	a) WaterAid 2018 data[13]		b) SWA current WASH budget allocation[14]		c) 2021 OECD Expenditure gap for water supply and sanitation infrastructure[15]	

Table 3: The investment gap to SDG 6 by 2030ODA

We see that in the last five years the % of GDP allocated to the WASH budget has hardly changed for most countries. Although there has been an increase in Maldives and Sri Lanka, the allocation is still < 1%, and in Bhutan, India and Nepal the allocation has decreased. While Nepal's %GDP allocation remains the highest, the investment needed to meet the WASH SDGs is also the greatest, suggesting that the allocation is not nearly sufficient to achieve the target and/ or there are serious utilisation inefficiencies.

In addition to SDG 6, Bangladesh in particular needs to invest in river (8.2% GDP) and coastal protection (2.8% GDP), though India (US$ 275.24b) and Pakistan (US$ 21.52b) also need to make considerable investments to mitigate risks of flooding and sea level rise.[16] Flood damage is expected to increase significantly with *"sea-level rise, more intense precipitation, extreme weather events, and socioeconomic developments (population and economic growth and urbanisation) result in an increasing number of people, and value of assets at risk, in coastal and riverine floodplains."*

Impact is based on valuation of assets at risk of flooding, the number of flood affected people, and the impact on GDP affected by floods. Bangladesh has a highest flood risk in the Asia-Pacific, with over 11% of the projected population exposed. Projecting populations to 2030, over 8 million people will be at risk in Bangladesh and 3 million in Pakistan. The valuation of at-risk assets is US$ 280b for India, or 6% of GDP in Bangladesh.[17] There was no data for Maldives of Sri Lanka on this indicator but presumably they also need to take serious steps to protect current and future WASH investments.

Regarding external funding, both OECD and WaterAid conclude that ODA remains a small proportion of investment in water infrastructure and does not reach the countries in most need.[18] (Table 4)

	Pop (m) 2018	WASH exp 2015 US$	Per capita US$	ODA 2016 US$ (m)	ODA per capita (US$ (m)	Annual average ODA	
country						2013-2017 US$ m	Per capita US$
Bangladesh	165	794	4.81	232	1.41	36.35	0.23
Bhutan	0.8	13	16.25	3	3.75	0.53	0.71
India	1343	5514	4.11	417	0.31	247.24	0.19
Maldives	0.4	-	-	4	10.00	0.01	0.01
Nepal	29.2	174	5.96	84	2.88	16.12	0.58
Pakistan	197	916	4.65	55	0.28	81.42	0.39
Sri Lanka	20	286	14.30	109	5.45	59.07	2.75
			a) 2018 data[19]			b) Annual ODA for water-related infrastructure[20]	

Table 4: WASH related ODA

12 OECD, 2021, p13.
13 WaterAid, 2018, Financing universal access to sanitation and hygiene by 2030 in South Asia, Table 4
14 SWA, 2017/2022, country profiles
15 OECD, 2021, Figure 2.2
16 OECD, 2021, p24.
17 OECD, 2021, p16-18
18 OECD, 2021, p9
19 WaterAid, 2018, extracts from Table 1,2 & 3
20 Water related infrastructure includes water supply and sanitation, water storage, flood protection, irrigation.OECD, 2021, Annex B.

OECD reports that India received significantly more ODA for the water sector in comparison to other regional countries, which are less able to draw on domestic sources of finance. Furthermore, national planning cannot presume availability of ODA, and thus externally funded projects are often not well coordinated with annual development plans, but run in parallel.

ODA allocations should instead focus on poor, risky countries which are not attractive to private capital, prioritising projects that have limited opportunity for revenue, recognising WASH as a basic social service, and investment decisions should not be made based solely on economic returns.

The table 5 below scores financial transparency and whether historical ODA agreements align with national WASH plans.

	Domestic		**ODA**	
Bangladesh	Water Supply and Sewerage Authorities Ministry of LGRD Department of Public Health Engineering Ministry of Health and Family Welfare Ministry of Primary and Mass Education	1/5 No financial data available, except for LGRD	Japan ADB WB/ IDA Netherlands Korea	0/5 No financial data available
Bhutan	Ministry of Health Monastic Body Ministry of Works and Settlement Ministry of Education	-/5 No financial data available	ADB Australia WB/ IDA Japan Korea	-/5 No financial data available
Maldives	Ministry of Environment Environmental Protection Agency Ministry of Education Male' Water and Sewerage company State Electric Company	0/5 No financial data available	Kuwait France Italy Japan Korea	0/5 No financial data available
Nepal	Ministry of water supply DWSSM Provincial Ministry of Local Infrastructure Ministry of Education Ministry of Health	5/5	ADB WB/ IDA Finland Japan Climate Investment Funds	1/5
Pakistan	Punjab Balochistan Khyber Pakhtunkhwa Sindh ICT	0/5	Japan United States WB/ IDA ADB Switzerland	0/5
Sri Lanka	National Water Supply & Drainage Board Ministry of City Planning and Water Supply Plantation Human Development Trust Ministry of Provincial Council and Local Government Ministry of Education	0/5	WB/ IDA ADB Japan Saudi Arabia OPEC Fund for International Development	1/5

Table 5: Activities captured/ aligned in national WASH plans[21]

The low scores and lack of data for many ODA agreements are a concern and reinforce the view that ODA projects often do not align with government objectives, and dependency on unpredictable external funding creates uncertainty for national planners and policy-makers, with projects poorly coordinated with national priorities.

Regarding international credit ratings:

- Bhutan, Maldives and Nepal have no sovereign rating.
- Only India is above the "non-investment grade" threshold at BBB-.
- Bangladesh is rated BB-,
- Pakistan CCC+ (CCC- is considered "in default") and,
- Sri Lanka is SD ("junk").

Such ratings do not attract investment, since the lender is vulnerable to non-recovery.[22]

Water use competition and food security are drivers for government investment in agriculture, specifically irrigation. Growing populations and climate change will require irrigation expansion and efficiency improvements. The largest share of irrigated land is in India and Pakistan. Benefits from expanded irrigation must be accompanied by increased water use efficiency or soil-water management technologies that increase the soil's water retention capacity. Irrigation improvements require investments in technology and conveyance systems, but country expenditure data is usually not available.[23]

21 SWA, 2020, Collaborative Behaviour Profiles_Bangladesh, Maldives, Nepal, Pakistan, Sri Lanka; 2017 Bhutan
22 tradingeconomics.com/country-list/rating
23 OECD, 2021, p19-20

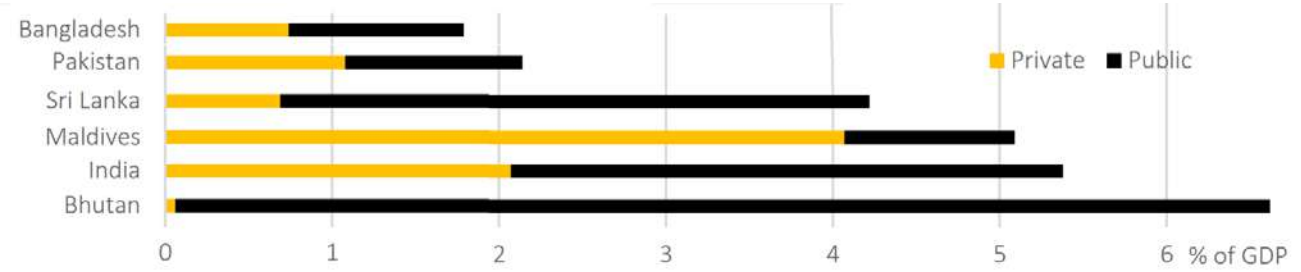


Fig 6: Public and private expenditure for water supply and sanitation[24]

Despite the lack of detailed data, public budgets appear to be the main source of funding for water supply and sanitation, at > 5% GDP in Bhutan, India and the Maldives (Fig 6).[25] Households only contribute significantly in a few countries in South Asia including Bangladesh, Nepal, and Pakistan. The driver for this in Bangladesh is an effort to cover costs through revenue from water bills, but in other countries due to lack of public budget allocation to water supply and sanitation.

If instead we look at absolute expenditure (Fig 7) we see the Maldives has been able to mobilise more private finance compared to other countries with available data. Yet the shift of spending away from water supply to the rest of the sanitation chain remains limited (Fig 8).

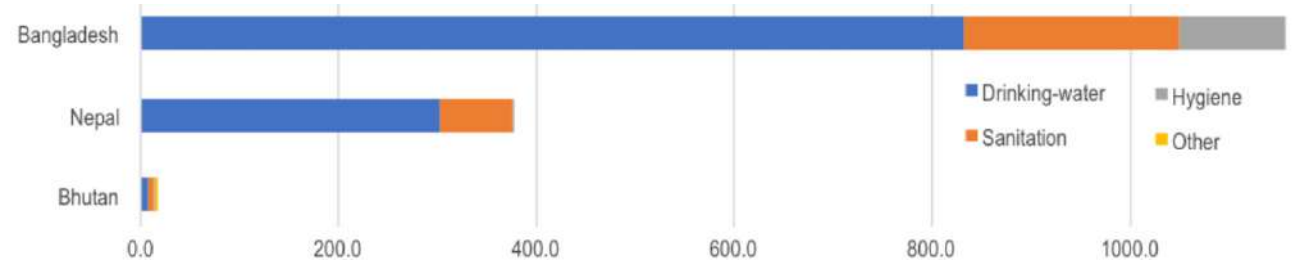


Fig 7: Annual WASH expenditure by funding type[26]

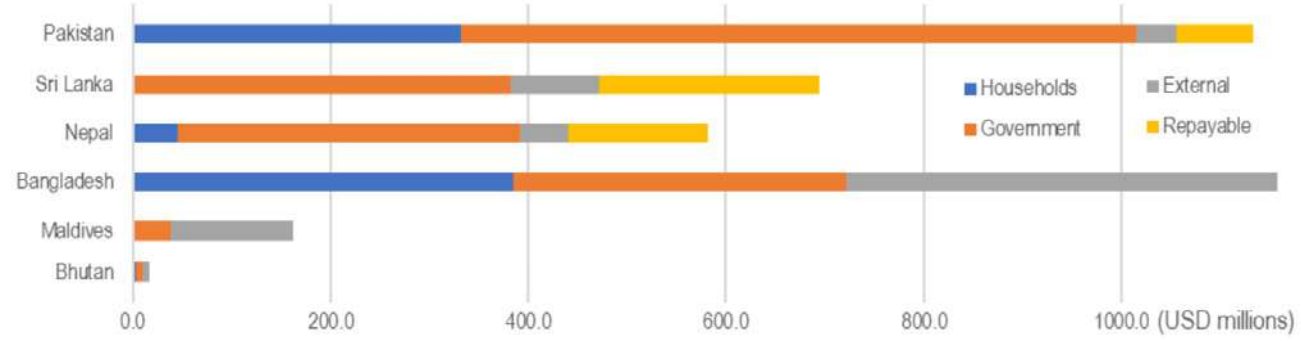


Fig 8: Annual WASH expenditure by subsector[27]

Principles for water supply service charges are inconsistent; attempting to balance cost recovery with affordability. Perceived or real affordability constraints affect the ability of service providers to cover water-related expenditure needs, but also to mobilise commercial loans.

In some Bangladesh cities, middle quintile households spend more than 10% of their annual income on water bills. Based on the rule-of-thumb level of 3%, OECD suggests there may be room to increase WASH tariffs in Bhutan.[28]

Non-revenue water (NRW) levels remain high, reducing income opportunities as well as willingness to pay, due to intermittent supply or water quality concerns. NRW interventions include reducing leakage, increasing water bill collection efficiency, removing illegal connections, maintaining meters.

24 OECD, 2021, p26, extracts from Fig 3.2. Budget estimate for Bhutan, 2011 data for Bangladesh, 2011-12 for Nepal, 2012-13 for India, 2011-2013 for Maldives, 2011-14 for Sri Lanka.
25 OECD, 2021, p25
26 OECD, 2021, p28, extracts from Fig 3.3, 2017 data for Maldives, Bangladesh, Pakistan; 2018 for Bhutan, Sri Lanka; 2019 for Nepal.
27 OECD, 2021, p28, extracts from Fig 3.4, 2017 data for Bangladesh; 2018 for Bhutan; 2019 for Nepal.
28 OECD, 2021, p8, 30-32

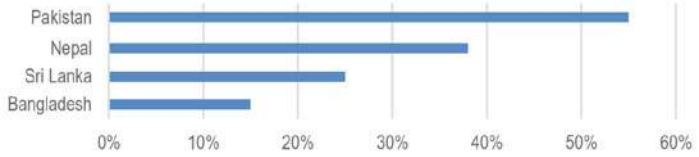


Fig 9: Non-revenue water[29]

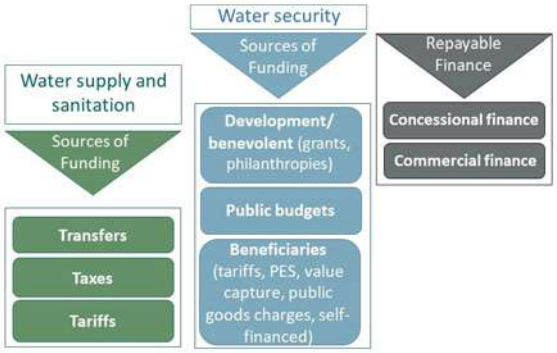


Fig 10: Potential sources of funding and financing for water-related investments[30]

The OECD identifies three main options to address the financing gap;[31]

- Make better use of existing assets: Improving operational efficiency and effectiveness of existing infrastructure and service providers leads to better service levels, which can improve willingness to pay. In the case of water supply and sanitation, operational efficiency may combine appropriate technology with economies of scale. Regulation is central in monitoring and incentivising operational efficiency. Taxes and tariffs are important for raising revenue, but also for managing demand and raising awareness of the value of water, water services and water security. However, in reality tariffs are too low to recover O&M costs. Over half of responding countries in a 2018 GLAAS survey indicated that water supply and sanitation tariffs were insufficient to recover 80% of O&M costs, let alone refurbishment and replacement costs.
- Improve efficiency of public expenditure: Robust planning can increase the coherence of water development between the WASH, urban development, land use, forestry, agriculture and other sectors. Realistic population projections as well as acknowledgement of climate change exploit synergies across projects. Decisions should be supported by realistic financing strategies; utilising performance-based contracts, to promote investments that contribute to policy objectives. Mitigating for future risks can significantly minimise future costs; for example managing water demand and strengthening water allocation mechanism can mitigate water scarcity, while flood risk mapping and land-use regulations can reduce flood damage costs.
- Use of cost recovery models is generally accepted in theory, private WASH investment is presently limited to only a few lower-risk countries including Maldives (4% of GDP) and India (2% GDP), as a result of efforts to encourage private investment coupled with a stable economy. However, other countries can also leverage public funding, for example, requiring land developers to invest in water security infrastructure, which adds value to their properties. Similarly, irrigation infrastructure tariffs contribute to total expenditure, as well as addressing "value of water", to incentivise water use efficiency.

29 OECD, 2021, p37, Fig 4.1
30 OECD, 2021, p25, Fig 3.1
31 OECD, 2021, p8-9

3 Synthesis

As noted in the methodology, this synthesis followed an initial qualitative data analysis using MAXQDA. The structure of this report reflects the issues that were mentioned by more than one country, as well as issues that were omitted.

3.1 Cross cutting challenges

3.1.1 Insecurity and instability

A variety of instability issues affect the FANSA countries.

Bangladesh reports that the sudden influx of almost one million Rohingya to Teknaf, Cox's Bazar, area put enormous pressure on water and sanitation, though around 30,000 refugees were subsequently relocated to Bhasan Char where safe sanitation was provided. Ensuring safely managed drinking water and sanitation in Teknaf remains a challenge despite the efforts of national and international agencies.

Pakistan (Balochistan) was severely affected by the devastating floods in 2022, *"necessitating a substantial realignment of the provincial government's efforts, particularly in prioritising interventions aligned with SDG-6… PSDP allocations under 2023-24 budget have witnessed significant initiatives related to WASH."*

Pakistan (Khyber Pakhtunkhwa) did not report on the impact of recent earthquake or floods on progress towards the SDGs, but noted the allocation of additional funds to mitigate for "the war against terror". It is unclear whether or how much of this funding is allocated to WASH.

#	Country	Inflation Rate (2022)
6	Sri Lanka	48.19%
43	Pakistan	12.15%
96	Bhutan	7.66%
109	India	6.89%
125	Nepal	6.26%
128	Bangladesh	6.15%
159	Maldives	4.27%

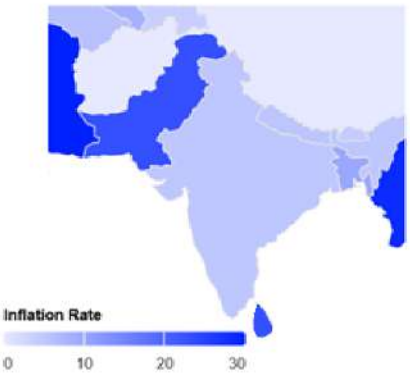


Fig 11: Inflation rates[32]

32 Adapted from wisevoter.com/country-rankings/inflation-by-country

Pakistan has also suffered from high inflation with today's exchange rate to the US$ standing at ~280 in 2024 compared to ~100 for 2014-2017 (Fig 11).

FANSA Sri Lanka notes that three recent disastrous occurrences including *"ethnic war in the northern and eastern regions that lasted 26 years, a tsunami that ravaged the island in 2004. The worst is the current economic and social debacle 2020/22 caused by a series of untimely and mismanaged economic measures that led to the current meltdown. External factors have compounded the catastrophe, including the COVID-19 pandemic and the Ukraine-Russia conflict"* and that the *"current economic crisis is unprecedented in scale and impact and has already shown how it can increase political risks and dramatically erode public confidence."*

The Sri Lankan civil war of 1983-2009 impact on northern and eastern districts hampered development in all sectors. FANSA report that many households of north western province still depend on dug wells while in Jaffna peninsula the main source of domestic water is ground water where "water availability is affected due to over exploitation and salinity intrusion."

Sri Lanka's declaration of bankruptcy in 2022 has been the most critical occurrence, halting development partners finance of major projects including those that were already underway. In 2020 the LKR:US$ rate was 185 and today it stands at over 300 LKR, making materials and fuel costs prohibitive; *"long power cuts and lack of medicine brought the health system to the verge of collapse…*[impacting] *negatively on achieving of sector targets and global targets in the WASH sector as most of the activities were derailed due to lack of foreign and local funds. On the other hand, construction inflation has risen out of proportion and all major development projects were halted due to shortage of material and unaffordable cost."*

However, Sri Lanka had already achieved over 90% safely managed water and 93% basic sanitation in urban areas as of 2020, and thus FANSA Sri Lanka believes progress toward the SDGs is possible, though performance will depend on *"recovery and restoration of the economy and steps taken towards achieving debt sustainability and sustainable development."*

Sri Lanka's National Water Supply and Drainage Board's (NWSDB) 2022 Annual Report identifies key business risks including; contamination of piped water, employee safety from COVID and OHS issues, credit risk, exchange rate, liquidity, high stock/ spares holdings, cyber risk, regulatory and compliance risks, however financial value of these risks is not quantified. In 2022 the board established a separate Risk Committee. However, comparison with the 2021 report shows that the identified risks had not changed despite the financial crisis and risk has not been quantified financially.

It is interesting that while Sri Lanka aims to increase piped supply in urban areas, equating it with "improved" service, NWSDB's risk assessment highlights the fact that "piped" water is not necessarily safe, and attention needs to be paid to source protection, treatment, conveyance and household storage and handling.

FANSA Bhutan did not mention the issue, however it is generally accepted that outmigration is a serious issue, with civil service resignations skyrocketing since 2022.[33] While other countries, including Nepal, also have high out migration issues, Bhutan's small absolute population is particularly affected by the number of government employees who are leaving, resulting in a serious capacity shortage and low morale.

3.1.2 Sector capacity

Sanitation and Water for All (SWA) reports 4% of Bangladesh's water and sanitation ODA is allocated to WASH policy and administration, education and training, 6% of Sri Lanka's, 7% of Nepal, 11% of Bhutan's, 21% of Pakistan's. There is no data for Maldives.[34]

While one might consider the high % allocated to Pakistan human resource (HR) capacity building as positive, when read in conjunction with the country report, this suggests a HR heavy bureaucracy in both the public and private sector. Staff costs are traditionally a major component of operating costs, staff ratios are useful indicators of overstaffing. Where separate water or wastewater staff information is not available, comparison can be made between utilities offering the same scope of service, i.e. a mix of water and sewer services.

33 kuenselonline.com/migration-of-bhutanese/
34 SWA, 2017, Collaborative Behaviour Profiles_Bangladesh, Bhutan, Maldives, Nepal

Pakistan (Khyber Pakhtunkhwa)'s Public Health Engineering Department has 10,997 staff, of whom 3% are engineers, 13% are support staff and 84% are "operational staff" servicing a combined urban and rural population of 18.6million, i.e. a staff ratio of ~0.2 per 1000 connections.[35] This low ratio seems at odds with the high staff related costs; pensions, loans etc that they report.

For comparison of staff ratios, data from the 2011 International Benchmarking Network Water Supply and Sanitation Performance Blue Book[36] is shared (Table 6):

BNET Indicator	Bangladesh 2009	Bhutan 2004	India 2009	Low income countries	Middle income countries	High income countries
Staff W/1,000 W population served (W/1,000 W population served)	0.3	1.3	0.6	20	3	0.8

Table 6: Staff ratios 2011

Bangladesh's 2020-2025 five-year plan acknowledged that *"municipalities face challenges in terms of insufficient human resources, financial limitations, and a lack of technology and resources to ensure the sustainable provision of water and sanitation services."* It is not clear how specific the government's plans are to address these issues.

Pakistan (Balochistan) mentions limited institutional capacity as one of the challenges to *"implementation and assessment of the outcomes of these projects."* FANSA Balochistan suggests "*it is essential to adopt a comprehensive approach that integrates infrastructure development with capacity building, community engagement, and sustainability measures. Investing in human resources and technical expertise within government departments, as well as promoting multi-stakeholder partnerships and leveraging innovative technologies, can enhance the efficiency and effectiveness of WASH interventions."*

FANSA Pakistan (Balochistan) recommends that *"budgets should be allocated not only for infrastructure development but also for capacity building, including training programs for local communities, government officials, and WASH practitioners"* though on what specific issues are not mentioned.

Pakistan (Khyber Pakhtunkhwa)'s notes that both the Public Health Engineering Department (PHED) and Local Government, Elections & Rural Development Department (LGE/RDD) lack financial systems and staff in financial management positions have low capacity. By comparison, they report that Water and Sanitation Services Companies (WSSC) are better positioned, with well qualified Chief Financial Officers, accredited financial management systems audited annually by third parties.

FANSA Bhutan identifies *"low level of human capacities"* as a challenge to achieving the WASH SDGs, but does not elaborate further.
FANSA Bangladesh report that many municipalities are *"capacity-deficient in providing sanitation and faecal sludge management services as population of urban areas has increased significantly."* Where exactly the deficiency lies is not specified; financial or technical, insufficient HR or budget.

FANSA India note that despite the potential of the unprecedented financial commitment of the current five Finance Commission year plan to WASH there are *"deficiencies in planning and implementation capacities" including "a lack of awareness on the policies and priorities of state governments… and the effective utilisation of funds."*

The Maldives was the only country which shared actual budget allocation for HR capacity building. Ministry of Environment, Climate Change and Technology included an allocation for the first time in their 2022 report, a nominal sum of US$ 0.17m.

Maldives' 2020-2025 National Water and Sewerage Strategic Action Plan[37] includes targets for sector capacity including; licensing of utility service provider technical staff, training water and sanitation engineers, ensuring that 30% of water and sewerage facility employees are women, and collaborating with educational institutes for capacity building.

35 Assumes average household size of 8.4. kp.gov.pk/page/mardan district demographics
36 documents1.worldbank.org/curated/en/420251468325154730/pdf/588490PUB0IBNE101public10BOX353816B.pdf
37 The 2020-2025 National Water and Sewerage Strategic Action Plan *"are essentially from the National Strategic Action Plan that has been endorsed by the Government in 2019".*

However, with the change of government in 2023, staff were moved from the Environmental Protection Agency to the Utility Regulatory Authority set up in 2020, resulting in reduced human resource capacity at the Environmental Protection Agency. Maldives also note *"the lack of trained health assistants in schools, impacting the promotion of hygiene practices and overall WASH standards in educational institutions."*

Sri Lanka comment that although sanitation is a local government responsibility, only Colombo Municipal Council has undertaken its own sewerage project design and construction, but due to '[in]*competency of CMC, COVID 19 pandemic, current economic situation…construction delays and contractual disputes continue to drag beyond 2023."* By contrast, National Water Supply and Drainage Board (NWSDB) is able to provide design and construction support to other agencies. For comparison with Table 6, NWSDB report a staff ratio of 3.1 in their 2022 Annual Report.

3.1.3 Political interference, corruption, graft, nepotism

FANSA Bangladesh alludes to unspecified political sensitivities for private sector to compete with government for social service provision, including WASH.

FANSA Pakistan (Khyber Pakhtunkhwa) reports that the Provincial Finance Commission chair is held by the local Finance Minister and that there is a practice of the Finance Commission assigning funds to *"on 'Block Allocation' which is mostly prerogative of Chief Minister which is mostly driven by politics rather than need and demand."*

FANSA Sri Lanka does not explicitly mention a problem of corruption, but introduction of digital payment systems is expected to reduce leakage and graft, as similarly experienced by India for social payment systems.[38]

FANSA India note a *"commitment to financial integrity, as evidenced by the engagement of certified Chartered Accountants for the thorough audit of* [Gram Panchayat] *financial records. This collective adherence to high standards reflects the robustness of the financial systems in place within the surveyed GPs."* However, FANSA India also note that despite the potential of the unprecedented financial commitment to WASH, there is an inability to maximise funding impact due to *"a lack of public pressure advocating for transparency… the enduring influence of higher tier governments on local bodies …and challenges related to public pressure, demand."*

Both Pakistan's WSSCs and Sri Lanka's NWSDB recruit financial professionals to managerial positions, operate standardised financial management systems, undertake annual audits and publish annual accounts, which hopefully goes some way to reducing opportunities for mismanagement.

3.1.4 Inter-sectoral coordination and coherence

Investment planning should explore opportunities to address multiple WASH related objectives; water supply, flood risk management, pollution, environmental protection; to increase cost-effectiveness when funding is limited. Coordination recognises how investments in other sectors contributes to water management; e.g. land use, urban development, climate change mitigation, hydroelectricity.

Combined efforts to raise the social and economic value of water can improve willingness to pay influence and influence WASH investment decisions. It may also increase opportunities to access non-traditional finance, such as climate or trans-boundary funds. UN Water's 2021 Progress on Integrated Water Resources Management scores countries on 4 dimensions of IWRM. In general, since the 2017 baseline, the FANSA countries have made improvements (Table 2). However, Maldives and Nepal scores have dropped for Institutions and Participation.

After the 2004 tsunami Sri Lanka's WASH coordination was placed *"under the chairmanship of the Ministry of Water Supply and a multi-stakeholder platform was established for all partners engaged in development in the WASH sector to maximise synergies to mobilise efforts and resources".* However, the National Coordination Meeting of the WASH sector has not met since COVID 19 pandemic.

FANSA Bhutan identifies lack of coordination among line agencies as a challenge to achieving the WASH SDGs, but identifies no specific examples.

The various budget allocations by different provincial departments demonstrates the *"multi-sectoral approach to WASH programming in Pakistan (Balochistan)…Public Health & Engineering Department, Agriculture, Irrigation,*

38 economynext.com/sri-lanka-water-board-to-go-digital-with-japan-support-135753/, www.elibrary.imf.org/view/journals/001/2023/078/article-A001-en.xml

Local Government, and other relevant departments have been allocated substantial funds to implement water supply, sanitation, and drainage projects. These allocations encompass a wide range of activities, including the construction of water supply schemes, tube wells, sewage systems, and drainage infrastructure, as well as the implementation of on-farm water management and watershed management programs."

However, it is unclear whether and how the sectors coordinate with each other to avoid duplication and maximise impact, and FANSA Pakistan (Balochistan) recommend the need for *"partnerships between government agencies, NGOs, private sector entities, and international donors to leverage resources and expertise for WASH programming. Adopt a multi-sectoral approach to address interconnected challenges and promote sustainable solutions".*

SWA have identified Collaborative Behaviours that *"if adopted by both countries and their partners, can improve the way that they work together to improve the long-term sector performance needed to deliver sanitation, hygiene and water for all, everywhere and forever."* Behaviour 1 is "Enhance government leadership of sector planning processes". The lack of data and low scores in Table 7 are a cause for concern.

	Government			Development Partners	
	1.1 A regularly reviewed, government-led national plan for WASH is in place and implemented	**1.2a A formal government-led multi-stakeholder national coordination mechanism exists for sector planning and review**	**1.3a.i Activities captured in national WASH plans or aligned through mutual agreement**	**1.2b Support for government leadership of multi-stakeholder sector planning / WASH sector plan**	**1.3a. ii Activities captured in national WASH plans or aligned through mutual agreement**
Bangladesh	3.5/5	5/5	1/5	2.5/5	0/5
Bhutan	4/5	5/5	n.d.	n.d.	n.d.
Maldives	2/5	4/5	n.d.	n.d.	n.d.
Nepal	3/5	5/5	5/5	n.d	1/5
Pakistan	2.5/5	3.5/5	0/5	n.d.	n.d.
Sri Lanka	3.5/5	5/5	0/5	n.d.	1/5

Table 7: Multi-stakeholder coordination mechanisms[39]

It is hoped that Pakistan (Khyber Pakhtunkhwa)'s use of the WASH Bottleneck Analysis Tool has been reflected in the provincial WASH Sector Plan 2019-2030, making it coherent both across sectors; between Public Health Engineering Department, Local Government and Rural Development Department, WSSCs, Health and Education; and within the WASH sector for the period up to 2030.

3.2 WASH vision and strategies

3.2.1 Meeting the WASH SDGs -national cross party priorities

Table 8 applies projected urban population data to the OECD per capita investment estimates of Table 3 to calculate the total investment gap.

39 SWA, 2020, Collaborative Behaviour Profiles_Bangladesh, Maldives, Pakistan, Sri Lanka; 2017 Bhutan

	Investment needed to achieve SDG 6.1+6.2 by 2030[40]		Based on current trends, progress needs to increase by x[41]			Urban pop projection 2030[42]	Investment gap US$ m	FANSA country report estimate US$ m	notes
country	Per capita US$ (A)	% of GDP	Water	San	Hyg	(B)	(AxB)		
Bangladesh	265	1.3%	26x	5.8x	-	84,160,114	22,302	928,500	(rural + urban)
Bhutan	n.d.	n.d.	16x	23x	-	399,108	-	25	(rural + urban)
India	215	0.9%	-	2.8x	34x	608,148,924	130,752	-	
Maldives	120	0.5%	-	-	-	230,942	28	381	
Nepal	600	2.7%	Current trend is -ve	2.6x	2.8x	8,399,316	5,040	-	
Pakistan	460	2.3%	-	-	-	111,475,337	51,279	-	
Sri Lanka	230	1.1%	-	-	-	4,749,044	1,092	2,011	(rural + urban)

Table 8: Expenditure gap for water supply and sanitation infrastructure (2021)

Bangladesh's Finance Division reports on planned and revised targets for water and sanitation for different periods. For 2021-22 the target for basic sanitation coverage was 67% but only 41% was achieved, similarly the target for 2023-2024 was 70% but only 43% has been achieved. For the period 2025-2026 the target has now dropped to 59%.

Similarly, FANSA Bangladesh calculate based on historical progress, that safely managed water coverage will only reach 62% by 2030 and sanitation will reach 40%, assuming funding can be provided. FANSA Bangladesh calculate that a 5-fold budget increase in annual budget by 2030 is needed to achieve the WASH SDGs, equivalent to ~US$15b for the period 2023-2030, compared to a previous 2017 government estimate of ~US$6b. Government data from an SDG Tracker, which regularly updates indicators, has been used to develop and action plan and financing strategy *"identifies a funding gap of US$928.5 billion from FY2017 to FY2030"* to meet all the SDGs.

However, government has already demonstrated limited capacity to spend existing public and external resources efficiently (Fig 9, Fig 12). SWA's assessment is that Bangladesh's progress for safe water coverage needs to be ~ 26 times faster and ~5.8 times faster for sanitation, if the WASH SDG is to be met[43]. Business as usual is unlikely to achieve the "exponential" path necessary to achieve full coverage of safely managed water, sanitation and hygiene.

Based on 2018-2023 five-year plan data FANSA Bhutan estimates a capital cost of Nu 2.12 billion (US$ 25m) to achieve 100% improved water sanitation coverage based on a sanitation unit cost of 75,000Nu (US$ 908). This compares to the 2016 capital unit cost of US$194.3 for sewerage and US$ 51.9 for septic tanks estimated by WB (Fig 27). However, this figure is for both rural and urban, and does not adjust for conversion of misidentified pits to septic tanks, safe management and emptying, population increases, urban migration, inflation, sanitation recurrent costs, or for associated sewage treatment plants and their operation.

Maldives estimates the funding requirement to achieve the Water and Sanitation Master Plan as MVR 4,770,793,500.00 (US$ 381m) for the period 2020 to 2025. *"Of this, 99% is allocated for implementing and upgrading water supply and sewerage infrastructure, and 1% for other components like regulatory framework, water safety, testing, performance improvement, advocacy, awareness, monitoring, and research. An additional MVR 69,895,500 is estimated for the period between 2026 and 2035. That will be 795,132,250.00 a year, and MVR 1543.58 per capita per year, or MVR 4.23 per capita per day".*

Despite an estimate to meet the SDGs in Nepal by 2030 prepared in 2016, as of 2023 *"it became evident that the WASH sector could only utilize 19% of the initially projected budget, absorbing merely 9% of the allocated funds. From the overall WASH budget forecasted for the SDG timeframe, it is projected that only NPR 147 billion will be expended by 2022/23, highlighting a substantial gap of NPR 1465 billion in the remaining period from 2023 to 2030".*

40 OECD, 2021, Figure 2.2
41 SWA, 2017/2022, State of Water, Sanitation and Hygiene Country Profiles
42 databank.worldbank.org/source/population-estimates-and-projections
43 SWA, 2022, State of Water, Sanitation and Hygiene Country Profile_Bangladesh

A revised National estimate for 2023-2030 identifies US$ 8b required for water supply (44%), US$ 7.8b for sanitation including SWM (42%), US$ 1.4b for WASH in schools (7%), US$ 0.5b for WASH in HCFs (2%) and US$ 0.7b for WASH in Public Places (4%). It is not clear if FSM I s included, or if this figure is a commitment by federal government. In any case, the FANSA municipalities have yet to develop their own WASH estimates to meet the SDGs.

Using data from a TrackFin pilot by WaterAid, a further national estimate to achieve the SDGs by 2030 of NPR 2422.9 b (US$ 18.4b) was calculated in 2023. This is comparable to the per capita investment estimated by SWA of US$ 600, for a current population of 30.5m (US$ 18.3b) (Fig31).

FANSA Nepal suggest that *"WASH sector ministries and local governments to prepare financing strategies for increasing budget in the sector"* and the need for *"WASH sector ministries and local governments to identify causes and prepare clear strategy for improving absorption capacity of the sector".* However, even if the annual budget was increased "by at least 20% from 2023 onward" to deliver the 1650b/ 2423b why not using 12tr it is apparent that the sector is unable to utilise it under current modalities and increased finances alone will not reach the rate of acceleration required.

Although FANSA Pakistan provides no estimate of the budget required to meet the WASH SDGs, Pakistan (Balochistan) recommends increased budget allocation *"to ensure universal access to clean water and sanitation facilities, to meet the targets outlined in SDG 6. Priority should be given to areas with the lowest access to water and sanitation facilities, including rural and marginalized communities".*

Sri Lanka shares a plan for achieving safely managed drinking water by 2030, costed at LKR 162,955m including rural water supply. For sanitation, LKR 910,581m is calculated necessary to implement the Sanitation Master Plan. FANSA Sri Lanka writes that a *"total funding to be utilized in the next 4 -5 years [of] Rs. 205 billion this is minimum requirement only for the priority action in the drinking water supply sector."* A further LKR 85,250m is needed for ensuring safely managed sanitation, *"total investment requirement in the next 5 years Rs. 100 billion for priority interventions in the sanitation sector".*

But they then also share state that LKR 162,955m is needed for Safely Managed Drinking Water and LKR 209,410m for Safely Managed Sanitation, which uses unit costs including inflation.

Of SWA's four critical collaborative behaviours, the first indicator for Behaviour 1 assesses whether government-led national plans are in place and implemented:

	Urban water	Urban sanitation	Hygiene	Institutional WASH	Coverage targets for specific WASH areas	Specific measures to reach vulnerable groups
Bangladesh	✓	✓	×	✓	~	✓
Bhutan	×	×	✓	✓	✓	✓
Maldives	×	×	×	✓	✓	×
Nepal	×	×	✓	✓	✓	✓
Pakistan	×	×	×	✓	~	✓
Sri Lanka	✓	✓	~	✓	✓	✓

Table 9: A regularly reviewed, government-led national plan for WASH is in place and implemented[44]

Bhutan's lack of national urban policy (Fig 11) has hopefully now been rectified by the National Sanitation and Hygiene Policy 2020, while Pakistan's urban policies are set at province level, rather than national.

Bangladesh has set two major National Priority Targets related to WASH, NPT 17 addresses SDG 6.1.1 and NPT 18 addresses SDG 6.2.1. Interestingly Bangladesh's Finance Division identify *"supply of safe water and sanitation facilities"* as the second priority for local government spending, *"to reduce waterborne diseases and prevention of contagion. As a result, the incidents of diseases and premature deaths will be reduced and people's productivity will be increased".* This recognition of the health and economic impacts of poor WASH is important, but how reduced health costs and lost productivity will be measured is not detailed.

Similarly, Sri Lanka's WB supported Water Supply and Sanitation Improvement Project extension[45] identifies the following social and health benefits, but does not identify how these can be quantified:

44 SWA, 2020, Collaborative Behaviour Profiles_Bangladesh, Maldives, Nepal, Pakistan, Sri Lanka; 2017 Bhutan,
45 WB, 2021, p16-17 (accessed at documents1.worldbank.org/curated/en/639141623636160347/pdf/Sri-Lanka-Water-Supply-and-Sanitation-Improvement-Project-Additional-Financing-and-Restructuring-Project-Paper.pdf)

- Time opportunity cost: (i) value of time saved in collecting water (for rural and estate areas), monetized using the median monthly income obtained from the HIES; (ii) the value of time saved from avoided caregiving to children under 5 due to diarrhoea assuming that the attributable fraction of diarrhoea due to inadequate water and sanitation is 0.379 and that diarrhoeal disease prevalence among children under five is 27%;
- Avoided healthcare costs: value of avoided health care costs for children under 5 with diarrhoea using the same assumptions as in (a) above. It was further assumed that advice was sought from a health facility or a provider for 87% of children under 5 who got sick in urban areas;
- Avoided coping costs of inadequate water: value of avoided costs on treatment, storage and buying water sold by private vendors, assumed to be 1% of household income.
- Increased revenue from water supply tariffs (assuming 100% collection rate in urban areas) and tipping fees from gully bowsers to the STPs; and
- External benefits of abated Biological Oxygen Demand (BOD) due to wastewater treatment. However, these are quite small given the low shadow prices of BOD released into the river

Nepal's Fiscal Commission weightage for water and sanitation of only 1% in the current Formula Based Fiscal Equalisation Grant suggests limited prioritisation of WASH at federal level, since it discourages local government from applying for WASH funds. It is unclear how WASH projects are incentivised by other grant mechanisms.

Pakistan's 2021 National Climate Change Policy underscores the government's *"commitment to addressing climate-related risks by prioritising an assessment of technological and infrastructure options aimed at enhancing resilience in the Water, Sanitation, and Hygiene sector. The policy sets a clear objective for 2030, focusing on achieving the sustainable management of water resources for all, aligning with the targets outlined in Sustainable Development Goal 6, which pertains to Clean Water and Sanitation. Following the impact of the COVID-19 pandemic, the Ministry of Climate Change has demonstrated heightened interest in the WASH sector, exemplified by the establishment of a dedicated WASH strategic unit".*

FANSA Bhutan suggests the need for *"a resource projection in order to achieve SDG 6 by 2030 along with a set of recommendations and a policy brief in order to garner political, governance and financial support to achieve Water and Sanitation for All by 2030"* suggesting that it is not currently a sufficiently high priority across parties.

The Fifteenth Finance Commission of India earmarked 60% of its total grant allocation as a "Tied Grant" for "Water Supply and Sanitation Services" to Panchayat Raj Institutions and Rural Local Bodies (PRI/RLB) for the period 2021 to 2026, which comes to a commitment of INR 1,42,084 crore (US$ 17b). *"This presents an unprecedented opportunity for the* [Panchayat Raj Institutions and Rural Local Bodies] *to meet the essential water and sanitation needs of the rural communities, a fundamental aspect of their mandated functions. However, despite its immense potential, this opportunity remains underutilised due to gaps in commitment fulfilment, a lack of public pressure advocating for transparency, the enduring influence of higher tier governments on local bodies, and deficiencies in planning and implementation capacities."*

However, Finance Commission fund guidelines state that "grants should not be utilised for Operations and Maintenance" which sends confusing messages to local governments, since they are not at liberty to prioritise for themselves, but are being encouraged to increase infrastructure rather than strengthen it.

Pakistan's National Drinking Water Policy does not mention what financial resources are assigned to local government agencies nor gives budget allocation to achieve policy goals and targets. In Pakistan, this is considered a provincial matter. Pakistan (Khyber Pakhtunkhwa) notes that in the *"last fifteen years neither the Federal Government allocated any special budget for implementors of WASH policy nor monitored the provincial allocations and urged the provinces to enhance the provincial allocation towards Drinking Water sector projects/ interventions." Further "no city/town has initiated any non-revenue water [initiatives], the involvement and investment of private sector in WASH is non-existent".*

Water and sanitation are high priority social services in Sri Lanka, which had made good progress towards water and sanitation MDGs prior to 2015, with creation of a designated Ministry for that purpose. The National Human Rights Action Plan recognises water and sanitation as two separate rights. Despite the economic crisis, Sri Lanka *"continues to be committed to the SDGs with the goals and objectives of the 2030 Agenda featuring prominently in national development strategies. Government policy, as outlined in the framework titled Vistas of Prosperity and Splendor, makes strong references to the 2030 Agenda and commits to a programme of actions to achieve the SDGs."* Sri Lanka's 2016 goal was 85% coverage for safely managed piped WS and 80% coverage for safely managed sanitation by 2025, and universal to clean water and sanitation access by 2030.

3.2.2 Budget allocation priorities and mechanisms

National

UN Water's 2021 Progress on Integrated Water Resources Management scores countries on 4 dimensions of IWRM. In general, since the 2017 baseline, the FANSA countries have made improvements (Table 2). However, for all countries except India, the finance scores are the lowest (there is no 2023 data for Bhutan)."[46]

Bhutan's 2018 national WASH budget was 0.65% of GDP. However, the budget for water and sanitation infrastructure is not known and WASH expenditure for key agencies including Ministry of Health Data, Monastic Body, Ministry of Works & Human Settlement and Ministry of Education are not available. In comparison the 2020-21 expenditure by the Desuung National Service Water Project was Nu. 69.15m (~US$ 0.84) and total expenditure on all infrastructure was Nu. 74m (~US$0.9) in 2021-22.

FANSA Bhutan identifies limited funding availability as one of the challenges to achieving the WASH SDGs, however *"the proportion of urban population having access to clean drinking water is 100%, achieving the SDG Target 6.1"* inferring little more needs to be done.

FANSA Bhutan write that *"quality of drinking water in urban areas, specifically in municipalities, is largely maintained through effective and timely treatment and organized distribution systems",* however the 2021 Disease Surveillance Bulletin found 61.6% of urban samples tested positive for microbial contamination, an increase on 46% in 2020, which would impact SDG compliance and Royal Centre for Disease Control found unsafe water in 44% of 29 surveyed urban health centres in 2023.[47]

Therefore, despite a high level of basic coverage, there is a need to raise service levels and assure sustainability. As Bhutan notes, there is *"no commensurate capacity building and skills development extended to the engineers and stakeholders to execute and operate the schemes and manage them thereafter. Since water and sanitation is a technical subject and requires constant and consistent updating to cope with the new technology development, it warrants constant capacity building at various levels and capacity building component embedded as the part of the project".*

Data for Bhutan's 2013-2018 and 2018-2023 five-year plans show 30% increase in local government budget for 2016, followed by a return to previous levels, despite inflation and decrease in international buying power. There was a subsequent 50% increase in budget for 2019-2021 followed by a drop to lower than previous levels in 2021 and 2022. FANSA Bhutan suggests that this is because funds were diverted from local government to water projects executed by the Desuung National Service Water Project. However, as mentioned in the Policy Review, a number of concerns arise regarding the Desuung project; project selection processes are unclear, diversion of local government staff for oversight while it operates in parallel to local government planning and funding mechanisms, without the need to follow procurement and accounting procedures.

India's 15th Finance Commission recommended allocation of 60% of the budget as direct grants to RLBs/PRIs for 2021-2026, amounting to US$ 17b for 'water supply and sanitation' services. However, FANSA India note that despite the potential of the unprecedented financial commitment to WASH *"PRIs appear to underutilise these funds due to various gaps in the administrative system. These gaps include insufficient knowledge on provisions, limitations in planning and execution capacities, a lack of awareness on the policies and priorities of state governments, and challenges related to public pressure, demand, and the effective utilisation of funds".*

FANSA Maldives identifies a key challenge as *"the struggle to secure adequate funding for both capital investment and recurring costs, hindering the development and maintenance of WASH infrastructure"* and that *"previously, WASH finance fell short of meeting MDG targets, resulting in less than 50% of the targets being achieved by 2015".*

In 2023 the Maldives government allocated MVR 643.8 m (US$ ~129m) for ongoing and new water and sanitation projects compared to the Water and Sanitation Master Plan estimate of MVR ~4.7b (US$ 318m) for 2020-2025 total funding requirement. This amounts to ~ MVR 954.15m/ year while actual expenditure for 2022 was MVR 1190.1 million (US$ 80.5m), a 25% higher allocation. 99% is allocated for implementing and upgrading water supply and sewerage and 1% for other components including *"regulatory framework, water safety, testing, performance improvement, advocacy, awareness, monitoring, and research".*

46 UNEP, 2021, Progress on Integrated Water Resources Management. Tracking SDG 6 series: global indicator 6.5.1 updates and acceleration needs

47 www.rcdc.gov.bt/web/wp-content/uploads/2023/06/Annual-Scientific-Report_2022_RCDC-1.pdf

The master plan for the period 2026-2035 allocates MVR 69,895,500 (US$ 4.6m), a comparatively low figure, perhaps because the government plans to address most infrastructure between 2020-2025. In both periods, the component activities are the same:

1. Regulatory framework
2. Implementation and upgrading of water supply and sewerage infrastructure
3. Creating resilience and water security through water and sanitation safety plans and water quality testing
4. Benchmarking for improved performance
5. Strengthen advocacy and awareness programs on water resources, water supply and sewerage
6. Raising human resource development for a vibrant WATSAN sector
7. Monitoring sector information and data management portal
8. Develop and strengthen research and evidence on water supply and sewerage

Nepal's federal WASH budget for 2022/23 was NPR 38.16 billion, 2 % of the national budget and 0.9% of GDP and a decrease of ~14 % from l the previous budget. 61% of the WASH budget is allocated to urban projects, 20% to mixed urban and rural programs, and 29% is targeted on the Kathmandu valley.[48]

As noted above, Nepal-WASH estimated NPR 2422.9b (~US$ 18b) for 2023-2030, an average annual allocation of US$ 2.6b, split between water supply (44%), sanitation and SWM (42%), with the remaining 13% allocated to schools, health care facilities (HCFs) and public facilities. However, 2023 WaterAid data shows ~45% of the federal WASH budget was allocated to water supply, 40% to water and sanitation combined, and only 12% to sanitation alone.[49] It is unclear whether actual disbursements have been in line with this split.

Public financing in Nepal is guided by various constitutional and legislative arrangements which ensure fiscal transfers to provincial and local governments. There are a number of different systems under which local governments can apply for funds through the National Natural Resource and Fiscal Commission. The complementary grant system can be used for education, health and water supply if local government matches fifty percent of the program cost. Local governments can also apply for water supply and sanitation funds as Special Grants or as Fiscal Equalisation Grants. The current weightages for the Fiscal Equalisation Fund are 1% each for water supply (water supply access) and sanitation (availability of toilets). Water supply and waste management are two of the eight areas eligible for Special Grants. 2018-2023 records show the two FANSA Nepal project municipalities accessed funds from a combination of central funds as well as provincial transfers and internal sources (federal revenue sharing and local). The majority of Pokhara metropolitan city's WASH budget came from Equalisation Grants and internal sources, while the majority of Hetauda budget came from internal sources.

FANSA Pakistan shares that federal government fund allocation has historically been based solely on population, with 80% distributed to the 4 provinces, and within the provinces again based on population. Thus, Balochistan consistently received the lowest budget allocation (~5%), and Khyber Pakhtunkhwa the second lowest (~14%). Funds for each 5-year period are disbursed on a monthly basis. Khyber Pakhtunkhwa notes that in the *"last fifteen years neither the Federal Government allocated any special budget for implementors of WASH policy nor monitored the provincial allocations and urged the provinces to enhance the provincial allocation towards Drinking Water sector projects/ interventions." Further "no city/town has initiated any non-revenue water [initiatives], the involvement and investment of private sector in WASH is non-existent".*

The allocation system was amended in 2002, but only implemented from 2010, and now also accounts for poverty and revenue scores. As a result, the allocations increased to ~9/16.4% for Balochistan and remained around ~16/20.6% for Khyber Pakhtunkhwa, of which 1% is for *"reconstruction relief due to 'War on Terror'."* The budget distribution within each province now also includes for poverty and revenue however sectoral allocations are not readily identifiable at provincial level.

Pakistan's federal government committed PKR 265b (US$ 0.9b) for WASH services in both provincial and federal 2023 budgets, an increase of 152% from 2019 and a 253% increase in WASH expenditure for 2022 compared to 2019. *"This positive trend in budgetary commitments and expenditures underscores the government's prioritisation of WASH services, signalling a significant boost in financial support to address water, sanitation, and hygiene needs across the country."* Budget documents reveal *"a consistent upward trajectory in WASH allocations from 2018 to 2023".*

48 washmatters.wateraid.org/sites/g/files/jkxoof256/files/financing-factsheets-for-wash-in-nepal-2022-23_0.pdf
49 washmatters.wateraid.org/sites/g/files/jkxoof256/files/financing-factsheets-for-wash-in-nepal-2022-23_0.pdf

Pakistan's provincial and district planning manuals guide the process for project identification, project formulation, project execution, monitoring and evaluation. Annual Development Programmes identify all projects approved and funded by the province or through donors. The recently introduced concept of Medium-Term Development Frameworks aims to improve fund predictability, fiscal discipline, and operational efficiencies. *"Line departments are required to submit a write-up on the department/sector's vision, objectives/policy and strategic interventions to be achieved in the next two–three years."*

UNICEF has supported Pakistan (Khyber Pakhtunkhwa)'s WASH Sector Plan for 2019-2030, targeting the SDGs. The plan is broken down into short (2019-22), medium (2023-26) and long-term costs (2027-30), budgets are allocated under Sector Policy and Strategy, Institutional Arrangements, Budgeting and Finance, Planning, Monitoring & Review, Capacity Development, Enabling Environment and Service Providers. Funding is distributed 45% for short term, 30% for medium, and 25% for long term activities. With both the 3 year and 2030 plans, it is unclear if or how tensions between new construction/ connections and O&M of existing assets are being addressed.

Interestingly, in Bangladesh urban safe water and sanitation access is lower than in rural areas, although access to basic hygiene is better. Therefore, since 2010 there have been efforts to increase urban coverage, although that seems to have now plateaued while still only at 53% coverage for safely managed water, 34% for safely managed sanitation and 66% for basic hygiene.

Key policy reforms in Bangladesh included increased public spending on water resources from the 0.8 to 2% of GDP and at least 0.5% of GDP allocated for operation and maintenance by FY2020, and providing incentives to promote public-private partnerships in water supply, water transport, river dredging, and sanitation. Although the current five-year plan 2020-2025 and the 2021-2041 Perspective Plans pledged to increase public investment, target interventions and create scope for private sector service provision, medium term public budget allocation has not met these commitments. FANSA Bangladesh note that achieving SDG 6 will require specific targeted interventions in addition to regular public spending.

Sri Lanka's National Water Supply and Drainage Board (NWSDB) is the key agency, for setting development targets, and accounts for over 45% of national water supply coverage[50] and uses financing from domestic and international sources. However, in 2022 the country defaulted on loans to WB and ADB, which resulted in freezing of funds from China, Japan and India as well as commercial loans. An IMF bailout package and debt restructuring began in spring 2023.

Although first established as a government department, today NWSDB is semi-autonomous, using service tariffs to cover O&M costs. Due to the economic crisis, while NWSDB's own revenues were double federal funding in 2018, this dropped in subsequent years and now federal funding accounts for ~50% of their budget, and own revenues account for 33%. The proportion of commercial bank loans also fell following the economic crisis, and is 12% of 2023 budget.

In the past 50% of National Water Supply and Drainage Board loans for urban water supply and 100% of sewerage projects were reimbursed by the government. However, all new water supply projects have halted and the policy for future NWSDB funding is unclear, but it is possible government may require NWSDB to repay the full value of ODA loans in future.

Two corporate plans, 2016-2020 and 2021-2025, identify investments and Key Performance Indicators, and National Water Supply and Drainage Board publishes KPI progress in its annual reports supported by JICA. The 2020 government had instructed NWSDB to revise the Corporate Plans to achieve national drinking water targets by 2025 to provide piped water to 80% of the population under the Water for All programme, which NWSDB estimated at LKR 1.1 billion (US$ 5.9m). The government assured financing of LKR 990b (US$5.3b at 2020 rates) for water supply for the period 2021-25 and LKR 960b (US$ 5.2b at 2020 rates) for sanitation for 2021 to 2030.

Due to national bankruptcy only extremely, limited funding was allocated by the treasury for selected activities of the Water for All programme, under the "Capacity Enhancement & Distribution Expansion Project." A key task for Sri Lanka is to *"revise the national plans and cost of financing with current escalated prices including projections for future budgetary allocations"* since the Water for All estimates were based on 2020 prices, which have increased exponentially due to the financial crisis. In 2023 the annual budget allocation to NWSDB is around LKR 70 billion (US$ 220m).

50 NWSDB, 2022, Annual Report. Accessed at drive.google.com/file/d/1m3dZbix2ck5f2yChTXGhR04r8Bdc5cNK/view

Nationally, updated priorities have been identified as; completion of ongoing projects and provision of onsite sanitation (to meet the safely managed service level and end open defecation) and the 2030 sewerage target has been reduced from 7% to 4.4%.

Although FANSA Sri Lanka write that the country *"has a strong case for promoting donor assistance by way of grants to sustain the quality of life of the rural population and operationalize commitment to for Leave no One Behind",* the financial situation casts doubt over the financial competency of government agencies.

Even so, FANSA Sri Lanka reports that the Sanitation Master Plan 2021-2030 committed to dozens of projects with a focus on institutional services; schools and training institutes, health care facilities, prisons, public toilets in towns and tourist centres; although it also included sewerage and WWTW. In any event, the total adjustment to cost estimates is a minimum 20% increase due to inflation and a new financing strategy is required.

Local government level

Bangladesh's Local Government Institutions rely *"on Pourashava tax and government funds as revenue sources for Pourashava WASH",* and allocate money from their budget to the WASH sector, and work in collaboration with the Water Supply and Sewerage Authorities (WASA) and Department of Public Health Engineering. The Implementation of Institutional and Regulatory Framework for Faecal Sludge Management National Action Plan for 2021-2030 commits City Corporations to establish and maintain budgets specifically for FSM services while the Pro-poor Strategy for the Water and Sanitation Sector in Bangladesh 2008 notes subsidy provisions for the "hardcore poor". Bangladesh points out that City Corporations are empowered to establish fees and charges for FSM. To do this they will need to develop business model including tariff structures for emptying and transportation services.

However, the four megacity Water Supply and Sewerage Authority (WASAs); Dhaka, Chattogram, Rajshahi and Khulna; are allocated >85% of the total urban WASH budget for the period 2021-2026. FANSA Bangladesh note that at present *"there is no separate development project on WASH in the remaining seven out of twelve city corporations in Bangladesh".*

The city corporations are the WASH implementing agencies in urban areas, however Department of Public Health Engineering's (DPHE) has less than 15% of the annual urban WASH budget to serve these areas including municipalities (Pourashavas, Bangladesh). In fact, the DHPE budget for 2025-2026 is only 3% of the total urban allocation, with the four WASA's getting 97%. Furthermore, FANSA Bangladesh estimates that the actual disbursement is less than the planned budget and therefore the WASH SDGs will be met if the country continues along these lines.

Based on generic data (rather than disaggregated data) from the 2018-2023 five-year plan, FANSA Bhutan state that the average annual per capita investment in municipalities was Nu 4590 (~US$ 55). This compares to their sanitation unit capital cost of 75000Nu (~US$ 910), and SWA's ~US$ 340 for both water and sanitation. Therefore, despite the fact that *"Nu 3.2 billion was invested in 12 FYP in the water sector against Nu. 1.9 billion in the 11 FYP indicating a sharp rise in the investment in the water sector"* a US$ 55 investment rate will not achieve the SDGs.

Financial data for urban WASH is not identifiable. However, we see that Sarpang and Thimphu's expenditures were higher than their own revenue allocation, while Chhukha and Samdrup Jongkhar's were lower.

In all districts except Samdrup Jongkhar, the budget assigned to National Service water projects since 2021 is more than the local governments' own resource allocation for the 5-year period, and in Chhukha and Thimphu districts it was more than triple.

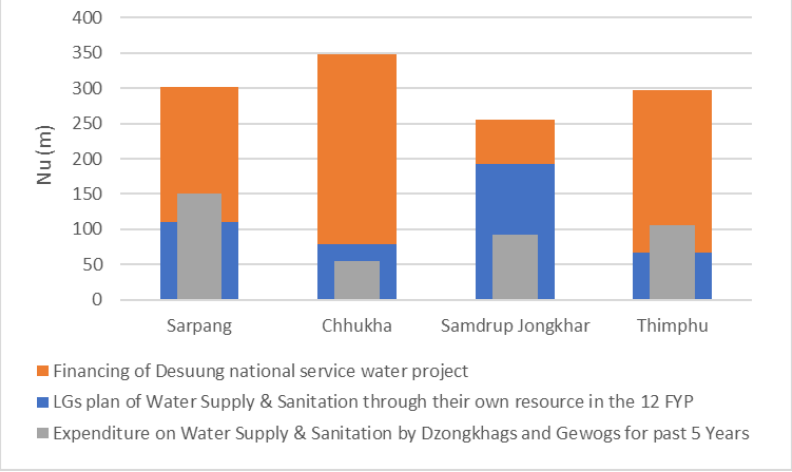


Fig 12: WASH budget allocations by source, expenditure – Bhutan 2018-2023

FANSA India note that *"grants received from the central government through the Public Financial Management System account are purposefully allocated and utilised for national priorities, particularly focusing on essential services such as water and sanitation at the PRIs/GPs. The dedicated focus on directing these grants towards water and sanitation activities underscores the commitment of GP functionaries to address crucial needs aligned with national priorities".*

FANSA India report that of the 50 surveyed GPs, 54% used their budget on rain water harvesting, 52% on bore well recharge and 26% on water recycling. It is not clear what % of their budgets was used, or if other non-water supply activities were also undertaken, sanitation, SWM, FSM etc, and as already noted, this information appears to be for a rural context.

FANSA Maldives advises that local governments were established in the early 2000s, and *"are still in the process of maturing".* Although they are responsible for basic services including waste management, street lighting, and maintenance of public spaces, central government retains significant control, including *"budgets and decision-making processes".*

For 2023 and 2024 the budget estimates are MVR 904.7 (US$ 60m) and MVR 1101.5m (US$ 73m) respectively, with 91% allocated to wastewater in 2020 and 2021 the actual allocation exceeded the budget, but at present projections allocations for 2023-2025 will fall short of the budget, by about 40% (~US$ 16m/ year).

FANSA Nepal shares data from 2018-2022 which shows that the federal WASH allocation decreased nationally by 14% in 2022/23 from 2021/22. Pokhara's budget reduced by half in 2023 from 2022 to NPR 14.4b (~US$ 109k) with 21% allocated to sanitation. However, Hetauda has no data from 2023, but maintained its WASH allocation in 2022 from 2021 of NPR 7m (~US$ 53k) with ~50% allocated to sanitation.

Local taxes and profit from hydro-electricity supplement the provincial budget allocated from Pakistan's Federal 'divisible tax pool', and 60% of this is then distributed to the district governments, Tehsil Municipal Administrations and Village councils. While the Federal allocation is fixed for a five-year period, the Provincial allocation is revised annually.

In Pakistan the Public Health Engineering Department are the lead for policy making development of drinking water supply and sanitation and service delivery at sub-district, district, division and provincial level, however they only design and construct piped based water supply schemes in rural areas.

According to the 2015 local council Planning & Development Department Guidelines at least 20% of village budgets should be spent on drinking water and sanitation, 30% in Tehsil Councils 30% and 10% in District Councils. However, it appears there is no data of what is actually spent, and how it is split between water, sanitation, SWM and FSM.

Pakistan's Local Government, Elections and Rural Development Department are the lead provincial WASH agency and are responsible for province planning, *"formulation of annual development plans, appraisal and review of projects, monitoring and evaluation of development schemes, socio-economic impact analysis, management of provincial statistics, foreign development assistance – donor coordination, …lead provincial representation in national development forums, lead steering committees for mega projects."*

Under a 2017 local government act, Khyber Pakhtunkhwa (Pakistan) should have developed a formula for budget allocation, but has yet to do so, therefore distribution is currently based on population, poverty and "lag in infrastructure" scores. 40% is retained at Province level for pensions, wheat subsidies, law and order, and the Rydel Development Fund.

The 2021-22 Khyber Pakhtunkhwa budget information does not provide enough detail to come to any conclusion except that education is a top priority. No WASH specific projects are mentioned and budget headings are not sufficiently broken down to identify actual fund allocation.

A further percent is earmarked for *"health, education and leave encashment of retired employees."* A similar situation is seen in Water Supply and Sanitation Companies (4.7.1), which suggests a top heavy bureaucracy in both public and private sector, with particular HR legacy issues in the public sector – pensions, leave encashment etc.

The 2015 provincial drinking water policy requires *"at least 10% of the provincial development budget for drinking water" "but in last 5 years the drinking water allocation (for development) remained between 2 % - 3%".* Despite the lack of identifiable WASH data, FANSA Pakistan (Khyber Pakhtunkhwa) advise that resources have *"skewed heavily in-favour of drinking water".* Due to the provincial level policy gap noted in the policy review, there are no budget allocation guidelines for other elements of the WASH chain; sanitation, sewerage, SWM, and FSM.

And although FANSA Pakistan reports that *"around PKR 5 billion [US$ 18m] grants under the budget of FY 2021-22 were allocated to seven Water Supply and Sanitation Companies of the province",* this basically subsidises the failure to collect suff*icient tariffs, connection fees or fines to achieve operational cost recovery. Provincial funds are transferred on "a defined budget preparation, re-appropriation/modifications, above all demand and political push basis. Annual budget of each WSSC is prepared covering revenues from different sources and the expenses and capital expenditure to be incurred during the year. After approval of the budget by the BoD of WSSCs, the funds are allocated amongst the departments of WSSC by the CEO. Funds are allocated based upon objectives agreed upon for a given fiscal year; and are given to the departments for specific expenditure categories."* However, it is unclear how priorities are defined; new construction, O&M, refurb, or on the basis of need; poor, marginalised etc.

Therefore, although the WSSC's are called "corporate" utilities it appears the majority are in fact not functioning as such and the expenditure: revenue "gap is partly or fully covered by subsidy" from provincial government. Cognisant of their relative sizes; Peshawar having more than 15 times the number of connections that Mardan; the provincial subsidy to Peshawar covered 150% of its expenditure, while Mardan's covered 460%! Over the period 2018-2021 Mardan's subsidy has decreased while Swat's has almost tripled. The WSSC 'own sources' exceeds revenue in every city.

Gap Analysis (2021)	PKR	**Abbottabad**	**Kohat**	**Mardan**	Peshawar	Mingora/ Swat
Rev	Million	37	23	9	410	58
Exp	Million	131	241	90	1,930	219
Gap	Million	94	218	81	1,520	161
Rev/exp%		28%	10%	10%	21%	26%
Total Own Source Revenues 2021		41	33	13	547	82
	% of revenue	111%	143%	144%	133%	141%
	% of expenditure	31%	14%	14%	28%	37%
Provincial funds 2021		213	382	413	2926	398
	% of revenue	576%	1661%	4589%	714%	686%
	% of expenditure	163%	159%	459%	152%	182%

Table 10: Gap Analysis

In light of the fact that urban WASH allocations are not clearly identified at present, FANSA Pakistan (Balochistan) recommends that *"robust monitoring and evaluation mechanisms should be established to track the impact of budgetary allocations and ensure accountability and transparency in the utilisation of funds".*

Balochistan's report provided only the provincial 2023-24 budget so we cannot identify the rural: urban split, nor comment on past actual allocations as a % of commitments or whether there is an increase or decrease over time. The data for 2023-24 indicates 44% of provincial budget allocated to water supply (~US$ 67m), 27% to water (~US$ 41m) and 26% to drainage (~US$ 40m). However, 42% of the 2023-24 'water' budget is allocated to the Irrigation department, 20% to agriculture and 30% to Public Health Engineering Department (PHED) which we assume is only for rural projects. Similarly, 96% of the 'water supply' budget is allocated to PHED, and 3% to local government. No information on provincial allocations to WSSCs, nor any information on revenue collection and expenditure was shared.

In addition to line ministry and provincial government transfers, Sri Lanka's local authorities generate revenue from various sources including: stamp duties, court fines, rates, property taxes, fines, licence, and rent. Their financial responsibilities include public health and sanitation, waste disposal, sewer management, public utilities including parks, markets and recreation centres, emergency services, roads and community water. WASH specific activities include rehabilitation of rural water supply, sanitary latrine support to low-income families, on-site sanitation emptying, solid waste management. No breakdown of the WASH related revenues and expenses was shared, nor rate of pollution incidents and responses.

Sri Lanka's NWSDB is divided into 12 regional offices, but budget and expenditure data were not shared at this level.

3.2.3 Ignoring the rest of the sanitation chain

FANSA Bhutan reports that although *"the water sector, including for drinking and irrigation purposes received high priority during the 12th five-year plan … and as well in the past five-year plans, the sanitation and hygiene did not receive similar needed support… there is a common general understanding that higher fund allocation to the water sector will translate to improved sanitation and hygiene. This argument is further corroborated by… high correlation (0.97) between resource allocation for water supply and improved sanitation and hygiene."*

Therefore, although only 34% (2019) of urban Bhutan has a sewer connection, it appears FANSA Bhutan consider that having *"achieved 100% accessibility to improved sanitation facilities in the urban areas"* little more needs to be done.

Remembering that India's project context is rural rather than urban, no % split of expenditure was available to determine which areas are prioritised. Although Finance Commission grants can be used for *"refurbishment and repair of non-functional toilets, along with ensuring water supply thus contributing to sustaining the ODF status",* principles of prioritisation and O&M interventions was not shared.

FANSA India report that the project Gram Panchayats are operating effective solid and liquid waste management systems, due to Phase II of the national Swachh Bharat Mission. Although Finance Commission grants are being allocated for *"retrofitting sanitation systems, ensuring functionality, and supporting sustained operations, it is to be noted that Operations and Maintenance expenses should be covered through user charges, and therefore, 15th FC [Finance Commission] grants cannot be utilised for meeting O&M expenditures."*

FANSA India shared the number of GPs used their funds for different activities; such as household compost pits, community compost pits, treatment plants, tricycles and transport, door to door collection, segregation at source, plastic waste collection, segregation and treatment and treatment plant O&M.

Similarly, the report shared the numbers of GPs using their five-year funds for setting up STPs, faecal sludge collection, faecal sludge conveyance, toilet and septic tank retrofitting, STP O&M, establishing community biogas, and biogas plant O&M. However detailed budget allocation was not shared, so we cannot comment on GP priorities. No information was shared on service charges or tariffs, or if revenue is generated from faecal sludge treated at STPs or biogas plants.

India was the only country to mention menstrual hygiene management (MHM), that surveyed GPs used their funds to install sanitary pad dispenser in public places, install sanitary pad incinerator at public places and for creating deep burial pits. FANSA India note that project area schools used funds for soap and washing products, for BCC and IEC materials. However, the proportion of budget allocation was not shared, so we cannot comment on GP prioritisation of MHM or hygiene.

As noted above, Maldives is the only country where central government has consistently prioritised wastewater expenditure over water supply. Since at least 2017, Maldives wastewater allocation has been over 80% (Fig 13). However, absolute budget for WASH has generally decreased since 2021, and the urban: rural split is not shared. Without a detailed breakdown, we do not know what is included within 'wastewater management'. Even so, it is commendable, and further research into their motivations and thinking could be beneficial for other countries.

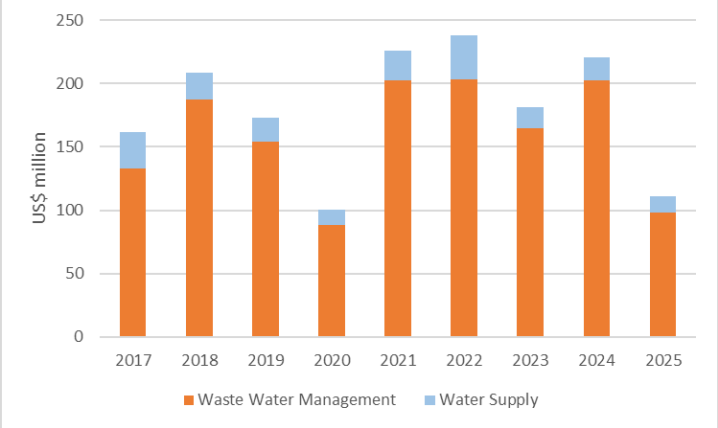


Fig 13: Maldives central government expenditure on waste water and water supply[51]

In a 2023 estimate of the budget required to achieve the SDGs in Nepal by 2030 44% was allocated to public facilities, 42% for sanitation, 7% for schools, 4% for water and 3% for HCFs. It is not clear if FSM was included,

51 Ministry of Finance, 2023

but in any case, sanitation has consistently received ~10% of the federal WASH budget from 2018 to current date. Similarly, Pokhara municipality (Nepal) data shows only 15% of the 2019-2024 budgets was allocated to sanitation, though Hetauda allocated between 40-50%/25% of its annual WASH budget to sanitation in the period 2019-2022. It would be interesting to understand Hetauda's decision making process on this issue.

2023 WaterAid data shows 32% of the combined federal and provincial WASH budgets was allocated to water supply, 10% to water and sanitation combined, and only 6% to sanitation alone, compared to the federal allocation of 45%, 40% and 12% respectively.[52] This indicates that provinces give more focus to stand alone water supply than combine projects, but the allocation to standalone sanitation remains about the same.

Provincial WASH finance data is not segregated for water or sanitation and FANSA Pakistan (Khyber Pakhtunkhwa) do not report on financial aspects of any urban service provider other than water supply by WSSCs. Although Khyber Pakhtunkhwa's WASH Sector Plan 2019-2030 splits service delivery between Drinking Water Supply Schemes and Solid/ Liquid Waste Management, allocated 25% and 75% of the planned budget respectively, it is unclear if further identification of spending for drainage, solid waste and faecal sludge management is available.

Similarly, in Balochistan (Pakistan) the provincial budget does not identify WASH interventions but is allocated by department; agriculture, irrigation, public health, secondary education, and local government. However, for the 2023-2024 post-flood budget enables separation of water (US$ 41m), water supply (US$ 67.5m), tube wells (US$ 1.2m), waste water (US$ 0.6m), toilets (US% 1.3m), drainage (US$ 40m) and sewerage (US$ 0.4). AS noted above over half of 'water' budget is for irrigation, agriculture and fisheries, a quarter for drainage and negligible amounts for toilets, waste water and sewerage, with no mention of solid waste management. This suggests that the priority remains on exploiting non-renewable water sources, rather than conservation sources, increasing reuse of grey water, or maximising water recovery from drainage and sewerage.

In the 2021-2022 Balochistan Public Sector Development Programme one scheme for Solid Waste Management in District Zhob was approved (budget of PKR 20 m/ ~US$ 97k), a study on Solid Waste Management and Disposal in Zhob, Loralai, Hub, and Quetta (budget PKR 20 m/ ~US$ 97k), two wastewater treatment schemes in Gwadar and Quetta (budget PKR 45 m/ ~US$ 220k and PKR 152.04 m/ ~US$ 750k) and a feasibility study for provincial Wastewater Treatment (PKR 20 m/ ~US$ 97k). It is not clear where these schemes fit into the provincial allocation given above, or if they have been completed and are now operational, whether they have O&M budget allocations or are planning for cost recovery through charges and tariffs.

Bangladesh's Medium Term Strategic Objectives and Activities as reported by Finance Division also show bias towards water supply infrastructure; construction of safe urban water sources, construction and maintenance of community sanitary latrines, improvement of rural and urban sanitation systems, piped urban water supply, water quality testing and regular monitoring of sources. However, the 2011-2025 Sector Development Plan aimed to establish "treatment …plants in municipalities to… convert the sludge into compost for reuse, or safe discharge into the environment." It is not clear what progress it has made on these goals as of today and how these plants are financed.

Sri Lanka's national policy aims to increase sewerage and sewage treatment to densely populated areas and environmentally sensitive areas, with the aim of reducing risks to fresh water sources. However, GLAAS data from 2019 states that 92% of Sri Lanka's WASH sector resources were used for drinking water, leaving only 8% for sanitation. FANSA Sri Lanka states that *"this level of disaggregated data … is not available in the budget documents."*
However, we can see that, despite Sri Lanka's high 2015 coverage, 71% of NWSDB funds up to 2021 was allocated to large scale water compared to 7% to large scale sewage (Fig 14).[53]

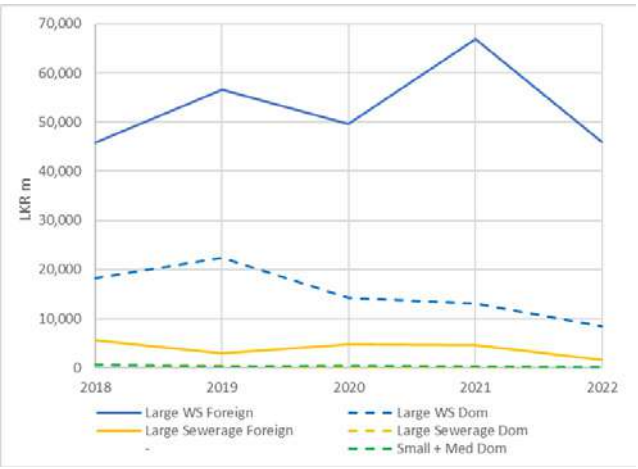


Fig 14: Sri Lanka fund allocations for major projects

52 washmatters.wateraid.org/sites/g/files/jkxoof256/files/financing-factsheets-for-wash-in-nepal-2022-23_0.pdf
53 NWSDB, 2022, Annual Report

The Sanitation Master Plan, which ended in 2020 identified new toilets, sewerage[54] and STPs for 41 Urban Councils and 15 Municipal Councils. New treatment plants were also planned under a WB funded project, to be operated and maintained by the local authorities, with technical support from NWSDB.[55]

FANSA Sri Lanka reports that the Water for All target of increased piped sewerage from 2% to 7% by year 2030 would theoretically have achieved 100% safely managed sanitation, but this presumes that all remaining on-site sanitation is safely treated, transported and disposed of, which of course cannot be guaranteed.

However, NWSDB's masterplan and Water for All plans are now "suspended", and the 7% sewerage target has been reduced to 4.4% in light of the economic crisis. NWSDB's 2022 Annual Report notes that construction of 3 of 14 planned FSTPs is underway and it appears that decentralised treatment plants were being investigated for Jaffna which has high ground water levels. Due to the doubling of construction costs, how sewerage priorities and budget allocation have been adjusted is unclear.

3.2.4 Schools, health care and public facilities

Institutional services were not discussed by all countries, but are clearly a critical element of urban service provision. No unit costs for accessible WASH, particularly important in schools and healthcare facilities, were mentioned.

FANSA India reports generally high levels of piped water supplies at institutions including schools, health centres and public places, except in "tribal residential schools", which suggests a service inequality which can now be targeted.

Maldives' School Health Policy 1986 includes provisions for WASH in schools, allocating budget and resources. However, *"it faces challenges such as funding inadequacies, poorly designed infrastructure, and a shortage of trained health assistants... highlighting the need for improved capacity, coordination, and financing to ensure sustainable operation and maintenance of school WASH facilities".*

Although allocations to the Education department can be seen in provincial budgets, it was only 1% of Pakistan (Balochistan)'s annual 2021-2022 water budget, and there was no allocation under sewerage, toilets or drainage. There is no identifiable allocation to health centres or public facilities.

FANSA Pakistan recommends *"priority to ensuring access to safe water and sanitation in schools and healthcare facilities. Providing WASH services in educational institutions and healthcare settings is essential for promoting a healthy learning environment and preventing the spread of diseases"* but provides no suggestions on how facilities will be sustained, nor unit costs for estimating budgets.

Sri Lanka's Ministry of Education is responsible for WASH in schools and in 2021 fund utilisation was Rs.850 million against an allocation of Rs.1100 million, 1.3% of the treasury WASH sector allocation. The national target is to provide 100% of the schools with WASH and menstrual hygiene facilities by 2025. The 2022 JMP has disaggregated data for primary and secondary schools, but not for urban and rural, nor for school hygiene. 2022 national coverage is 85% for basic water supply, 92% for basic sanitation, therefore there is a need to raise service levels.

Though Sri Lanka's Ministry of Health is responsible for HCF WASH "there is no separate allocation for water, sanitation and hand washing." Although there is no national policy for hygiene, in response to COVID 19 hand washing facilities were provided at public places and schools. The EU supported Reaching the Unreached project provided sanitation and hand washing facilities at 80 schools in 4 districts (LKR. 150 m) and World Vision's pre-2019 WASH programme included school and community WASH with hygiene education (LKR 400 m). The 2019 Household Income and Expenditure Survey was the first to collect limited handwashing data.

3.2.5 Ensuring sustained services – O&M

Very few country reports discussed funding operation and maintenance, though clearly some O&M must already be taking place.

54 NWSDB, 2022, Annual Report
55 documents1.worldbank.org/curated/en/639141623636160347/pdf/Sri-Lanka-Water-Supply-and-Sanitation-Improvement-Project-Additional-Financing-and-Restructuring-Project-Paper.pdf

Maldives is the only country which specifically mentioned funds allocated for maintenance, MVR 517,174,245.00 (US$ 103m) for the period 2013-2025, while actual expenditure was US$ 112.5m and *"it is expected that the total expenditure for infrastructure will decrease as most infrastructure is developed".* However, the split between urban: rural and service type is not shared.

This is equal to the budget allocated for new water and wastewater projects for the same period and in line with the WSP/ WB 2016 report which states that *"it is critical to consider the ongoing finances required to ensure the proper operation of these services costs of operating new infrastructure will exceed the annual capital cost requirements to meet those remaining unserved."*[56]

Nepal did not report on O&M but WaterAid national data indicates that 49% (NPR 19 billion) of the WASH budget is for capital costs, 23% (NPR 9 billion) for recurrent cost and 28% (NPR 11 billion) for financial management. However, Ministry of Water Supply's own allocations for 2021/22 was 4% to recurrent and 96% to capital costs.[57] Understanding the detail of these recurrent cost allocations would be beneficial, to identify the most effective interventions for sustained service levels.

FANSA India reports that the 50 surveyed GPs have used federal funds for *"enhancement in the performance and functionality of water supply systems and infrastructure.* [i.e. retrofitting existing WS schemes, desilting tanks and storage, O&M] *While this marks a positive outcome, it's important to note that 15th FC grants should not be utilised for Operations and Maintenance purposes"* although "Operations and Maintenance expenses should be covered through user charges". However, the FC rules appear contradictory since funds can be used for refurbishment and repair of existing toilets and for 'retrofitting' SWM systems.

Although in theory refurbishment and rehabilitation of existing networks are supposed to be funded by Sri Lanka's NWSDB's own revenue a number of ODA projects are identified in the 2022 Annual Report including 2 ADB funded rehabilitation programmes for combined water and wastewater treatment plants and 1 WTP refurbishment funded by Export-Import Bank of India, as well as numerous 'efficiency' and 'capacity improvement' activities, replacing pumps and increasing pipelines.

Under the WB's Water Supply and Sanitation Improvement Project extension urban water supply systems are designed for a 30-year period at 80-120 lpcd 24-hour supply, treated to Sri Lanka Standards for potable water. How the project aims to ensure a 30-year service life is not shared.

3.2.6 Water competition

Water is generally an under-valued resource, not properly accounted for by businesses that depend upon or affect its availability, including urban developers, farmers, industry and energy suppliers. Failure to acknowledge the non-renewable nature of fresh water in particular, undervalues water, failing to recognise earth's environmental limits, including water extraction and waste disposal.[58]

Increased demand for water creates pressure to diversify water sources, leading to Illegal or uncontrolled abstractions by households and farmers. Water demand management options include abstraction fees, awareness raising and volumetric water tariffs to reduce consumption and increase efficiency. Abstraction charges signal the value of water. Surface water abstraction charges should be lower than ground water charges to avoid substitution effects. If abstraction is unmetered, a proxy assessment method is required, e.g. land area, crop type and irrigation method.

Attempts to improve food security and to support small farmers often result in water being allocated to low-value agriculture uses, with low water use efficiency, when in fact wastage and low-value uses should be abandoned to secure water for the future. Cheap and subsidised electricity has made groundwater pumping possible for millions of farmers, which has improved food security and poverty reduction, but led to groundwater depletion. Addition of solar-powered extraction will further add to this problem and incentives for sustainable use of all water sources are needed. The OECD "Health Check" for Water Resources Allocation may be a useful tool to assess current water abstraction status.

56 WSP/ WB, 2016, The Costs of Meeting the 2030 Sustainable Development Goal Targets on Drinking Water, Sanitation, and Hygiene
57 washmatters.wateraid.org/sites/g/files/jkxoof256/files/financing-factsheets-for-wash-in-nepal-2022-23_0.pdf
58 www.kateraworth.com/doughnut/

Strategies to reverse groundwater depletion: example from India[59]

In several states in India, integrated policies for electricity and groundwater allocation have shown mutual benefits for the conservation of both resources. In a context where metered tariffs for electricity were difficult to enforce because of strong opposition, transaction costs and corruption, the combination of a bifurcated power supply system, flat tariffs and rationing appears to be a practical solution.

The scheme has created enhanced predictability in terms of quantity and quality of electricity access for both farmers and non-farmers, resulting in a significant decline in the power consumed by the agricultural sector and cost of related subsidies. At the same time, the scheme has resulted in decreased groundwater consumption, allowing depletion to slow down. Moreover, water well owners have experienced declined risk in terms of pump maintenance costs and power shortages.

Nationally Pakistan's budget focuses on agriculture, and WASH is a relatively low priority. FANSA Pakistan notes that water is *"generally considered a free and infinite source", clearly an unsustainable position, and that there is a "need to define a mechanism for rationalising the fee for ground water extraction that should be used for developing resource to recharge ground water."*

It is not possible to identify the WASH related elements of the Public Sector Development Programme budgets, but for 2021-2022 agriculture and irrigation received 85% of the Balochistan provincial budget for WASH related activities. In the 2023-2024 water related budget, 21% is allocated to agriculture, irrigation, livestock and fisheries, however it accounts for 57% of the 'water' budget and 52% of the "tube well" budget, which is a concern.

FANSA Bangladesh mentions the use of *"solar-powered water pumps can be installed in chars for supplying piped water at fixed points, which can be used for both drinking and irrigation",* which as mentioned above causes difficulties for price setting, since the scale of irrigation consumption far exceeds that for drinking.

FANSA Bhutan notes that water component of the current five year plan is *"sustainable water-ensure water for all (DRINKING and IRRIGATION)" and "drinking and irrigation received high priority [under the] water flagship program."* From the list of completed projects on the National Service Water Project website; in the absence of any project costs; we find that irrigation projects account for 16% of pipeline length, and 2% is for combined drinking water and irrigation. However, irrigation projects account for 31% of completed project duration, and 4% are combined drinking water and irrigation.

From a slightly different perspective, Bhutan noted the need to *"engage the public in advocacy campaigns that inform them about their rights to clean water and sanitation and at the same time the responsibility and accountability that they should bear"* which relates to appreciating the value of water.

3.3 Current WASH funding sources

3.3.1 Domestic or foreign sources

As above, there is a lack of detail on funding sources for urban: rural, by service type and at different government levels.

Along these lines, FANSA Bhutan note that for the 2018-2023 five-year plan *"government and donor shares are Nu. 417 million (13%) and Nu. 2802 million (87%) respectively. This over dependence and reliance on external financing for such an important priority WASH activity is susceptible to external shocks as the external financing often is unpredictable, unreliable, comes with strings attached to it and poorly coordinated with the national priorities and interventions".*

59 OECD, 2021, p45

Bhutan's WASH financing comes from a mix of sources; including government planned allocations (13%), grants and loans from development partners and private sector contributions. In 2023 development partners included Government of India (85%), UNICEF, SNV (Netherlands), ADB (2%) and World Bank. For the 2018-2023 five-year plan, this is an average annual allocation of US$ 1m by Royal Government of Bhutan, ~US$ 7.8 from India, and US$ 0.15 from ADB, however we cannot identify the allocation to urban WASH.

FANSA Bangladesh's only comment on external funding was the suggestion that development partners facilitate achievement of SDG 6 by supporting social enterprises, NGOs and government especially *"in enhancing capacity* [targeting] *climate hotspots through financial support, technical assistance, and technology transfer".*

Pakistan's main domestic sources are taxes, oil and gas royalties, and hydropower revenue. FANSA Pakistan believe that Pakistan's commitment to achieve the SDGs has led to increased WASH related international development assistance over the past ten years, from US$ 81m in 2010 to US$ 187m in 2019. Following the 2015 earthquake and 2017 flood, annual development aid greatly exceeded the previous annual average at US$ 289m and US$ 307m respectively.

WASH financing in the Maldives comes from *"the Public Sector Investment Program (PSIP), development bank loans, foreign banks, and donor grants"* and external WASH funding has increased almost 6-fold in the last 20 years.

Nepal shares that taxes are levied at federal, province and local government level while tariffs are levied by local governments and the national water utility. Transfers to government agencies are channelled through Federal government, while NGOs receive them directly. WaterAid data for 2022/23 indicates that ODA only accounts for 17% of the WASH budget, 80% of which are loans. In the period 2016-2023 the proportion of external funding dropped to 28% from 54%, with Helvetas, UN Habitat, WHO and EU funding ending in 2017/18. Of the 83% domestic funding; over 80% is revenue, and the remainder loans.[60]

At local level, FANSA Nepal shares data for the project municipalities funds sources from 2019-2024 (Fig 15) but does not elucidate on the revenue sources, nor the principles of tax redistribution to basic utilities.

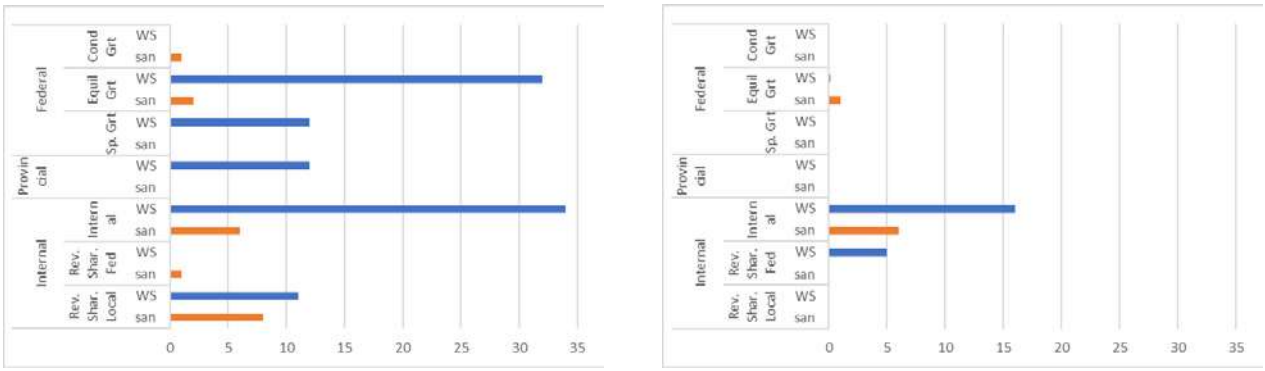


Fig 15: Nepal- WASH funding sources 2019-2024 Pokhara & Hetauda (NPR m)

Pakistan notes that tax is collected at both federal and province level and this division of responsibilities and multiplicity of legislation has led to tax arbitrage (avoidance and evasion). In any event the federal budget accounts for ~80-90% of Pakistan (Khyber Pakhtunkhwa)'s annual provincial budget. Since decentralisation began in 2002, the provincial budget has increased 15-fold, with a big jump in 2011 and again in 2018/2019.

FANSA Pakistan notes that in addition to federal government budget allocation, provinces can borrow from multilateral banks *"that are officially contracted by the Federal Government on behalf of the provincial governments and (their rupee value) is on-lent to the provinces. Constitutionally, provinces are also empowered to borrow externally or domestically, subject to limits set forth by the National Economic Council. However, provinces cannot raise any loan without the consent of the federal government if it already has an outstanding loan to the federal government. Provincial governments also borrow directly from commercial banks for state trading in agricultural commodities. While these loans are guaranteed by the federal government, their valuation is currently zero, as they are assumed to be backed by commodity stocks".*

FANSA Sri Lanka notes that 95% of WASH funding comes from the national budget and commercial financing has not exceeded 2% of the national budget in the past 10 years. In 2023, 94% of WASH funding was allocated by Ministry of Water Supply to National Water Supply and Drainage Board (urban), 1% to Department of

60 washmatters.wateraid.org/sites/g/files/jkxoof256/files/financing-factsheets-for-wash-in-nepal-2022-23_0.pdf

National Community Water Supply (rural) and <1% to Water Resources Board (ground water investigation, tube well installation). Many of NWSDB major projects are funded by bilateral and multilateral loans or grants channelled through the treasury but NWSDB also uses treasury guarantees to secure commercial bank loans. O&M of existing services is supposed to be financed through National Water Supply and Drainage Board's own funds, however the Capacity Enhancement & Distribution Expansion Project which has replaced the Water for All Project, puts focus on raising service levels.

Provincial budgets sometimes include water and sanitation but there is no regular allocation. The Local Government collects taxes to undertake "minor works related to environment and sanitation only". Some funds are also allocated by the Ministry of Provincial Councils to local bodies through the Finance Commission for environmental sanitation, i.e. SWM and FSM

In Sri Lanka almost all major WASH development works has been financed by multilateral development banks or bilateral agencies. *"From 2015 to 2020, approximately 78.5% of the WASH sector budgetary expenditures were funded through foreign resources, while the remaining 21.5% was funded through domestic resources. The World Bank and Asian development Bank finance 80% of the capital expenditure while the government has to make available 20% of the total project cost as counterpart funds. The NWSDB was allowed to borrow from local banks for priority projects that are not financed by foreign loans".*

In 2022, 51% of NWSDB funds came from the government, 37% from foreign loans, and 11% from "domestic funds".[61] For example, ~70% of funding for the 2016-2023 Greater Colombo Water and Waste Water improvement Project is from ADB, 17% from the Asian Development Fund, and 15% from Government of Sri Lanka. It includes rehabilitation and expansion of part of the existing wastewater/ sewerage system, rehabilitation of pumping stations. Operations outside the municipal boundary are NWSDB's responsibility including: sewer, sea outfall and pumping station rehabilitation.

As one would expect, Sri Lanka is currently struggling to finance WASH investments and many projects have been suspended. Spiralling inflation and collapse of the currency are serious challenges to achieving national and international WASH targets. *"In 2022 the amount received is only 10% of the total"* Water for All planned activities work.

NWSDB's 2022 Annual Report notes projects have been *"temporarily suspended"* due to the non-availability of external funds and unaffordability of construction materials, treatment chemicals and equipment including water meters. However, they also report research on use of locally available materials for water treatment, and efforts to address NRW, bill collection and improved productivity, yet *"considerable amount had been spent assets may be idle."*

3.3.2 Government vs private WASH service provision

Although cost-recovery methods and market driven models in general are considered the way forward for many countries, separating service provision and regulatory roles, it should be noted that privatisation of basic services in the 'west' has had limited success. Traditional private sector business models do not account for the environmental value of water nor the environment in general and often struggle to ensure basic services for the neediest.[62]

Service models from 'developed' counties should be copied with caution, and countries should not allow ODA agencies to push their own agendas. (Fig 15)

Government

Bhutan, Nepal and India shared no information about the role of private sector in WASH provision and thus it is assumed that at present, government is the sole urban service provider. Details of charges, tariff etc were not shared, so we cannot comment on financial barriers to services, whether or how value of water is conveyed, etc.

The public sector also plays the predominant role Bangladesh's WASH infrastructure and service provision, though private for-profit and non-profit sectors are becoming more active *"through investment in commercial provision and social innovation."* Water Supply and Sewerage Authorities provide piped water and sanitation services in four megacities. Department of Public Health Engineering provide the public water and sanitation services in municipalities and have primary responsibility to achieve SDG 6.

61 NWSDB, 2022, Annual Report.

62 www.theguardian.com/commentisfree/2022/aug/16/i-worked-on-privatisation-england-water-1989-failed-regime, weownit.org.uk/blog/fight-against-water-privatisation-europe, www.theguardian.com/commentisfree/2022/nov/25/privatisation-has-failed-australia-needs-to-ditch-the-incentives-rhetoric-and-simply-spend-money-on-things-we-need

In the Maldives the state-owned company, FENAKA provides water and sanitation services in most of the outer islands, with infrastructure constructed by the national government.

Although Pakistan's PHED is the lead WASH agency at province level it is not involved in urban WASH, but only rural services. Instead *"Local Government, Elections and Rural Development Department is the lead provincial government department for the development of drinking water supply and sanitation sector in small-and-medium-sized towns and cities (peri-urban areas). The tehsil municipal administrations (TMAs), municipal committees (MCs), village and neighbourhood councils VC/NC or local development authorities (LDA) are responsible for provision of drinking water services and sanitation services.* "

It is unclear if the local governments design and construct as well as provide services, the scope of services or the charges levied for connections, tariffs etc. Both Balochistan and Khyber Pakhtunkhwa mainly discussed water supply, and the issues of sewerage, SWM and FSM were not elaborated upon. From the budget allocations we can see that Education and Health sector also have WASH responsibilities, presumably limited to infrastructure and management, with water and sewerage (if present) supplied by the relevant local authority. How water related budgets disbursed to Minority Affairs, Communication and Works, or Urban Planning departments is utilised, was not explained.

FANSA Sri Lanka shared that their WASH sector is centrally controlled by decentralized government institutions under the Ministry of Water Supply, and involvement of other partners including the private sector and NGOs is less than 10%. Sri Lanka's National Water Supply and Drainage Board share of spending is projected to increase from 2021 to 2031 (28 to 66%) while local government spending decreased (57 to 25%). Spending for other agencies; Ministry of Health, Ministry of Education, Ministry of Higher Education, Ministry of Skills Development and Vocational Training, Department of Prisons, NHDA, BOI, and IDB remain minimal and unchanged. WASH capital costs have mainly been funded through major projects by external sources, though NWSDB achieved >80% recovery of operational costs in 2022. FANSA Sri Lanka consider this an indication of the confidence held in NWSDB by donors, but how plans have been affected by the financial crisis is unclear.

NWSBD serves approximately 46.8% (10.8m ppl) of the population with 2.9m water connections in both rural and urban areas, though its services mainly cover high density populations. Most of NWSDB's water supply schemes include full water treatment but a few provide only partial treatment. By comparison it only records 27,820 sewerage connections in 2022. It appears that CBOs manage about a fifth of Sri Lanka's national piped water services, but whether this includes urban areas and how this works is unclear.

Private

Although some private providers are involved in faecal sludge management services in Bangladesh, "inadequate incentives" hinder the market. Bangladesh's Sector Development Plan 2011-2025 aimed to increase private sector involvement in sanitation services, *"establish suitable business models and offer attractive financing options to encourage and stimulate private sector engagement in sustainable service delivery."*

The 2011-2025 Sector Development Plan anticipated construction of Pourashava STPs, with municipalities charging households for collection. Sludge would be turned into compost, packaged and sold to local farmers as a soil conditioner. It is not clear what progress has been made on this goal as of 2024. Sakhipur FSTP and co-composting plant in Tangail district is cited as a positive example, recovering ~70% of costs from waste collection tariffs and compost sales. Details of the 'incentives' which Sakhipur FSTP avails are not shared. However, FANSA Bangladesh reports that private sector participation is not significant as of 2024, due to low connection fees and willingness to pay. Despite this, they suggest that public-private and public-NGO partnerships can supplement municipal capacity to provide sanitation and faecal sludge management services.

Bhutan's report only mentions Bhutan Toilet Organization collaboration with disability-focused organisations in relation to WASH provision. Private sector provision of other WASH services is not discussed. Similarly, India and Nepal do not mention any private sector service provision though Maldives' 2020-2025 National Water and Sewerage Strategic Action Plan includes a target to implement standard mechanisms to *"foster private sector investment in the water and sanitation sector by 2020."* It is unclear whether this was achieved.

In the Maldives the Male' Water and Sewerage Company Private Limited is a private listed company, with 80% of its shares held by national government. Presently MWSC serves more than 50% of the Maldivian population in Male city and Dhuvaafaru island. A private company, ALTECH serves K. Dhiffushi islands, with infrastructure constructed by the Ali Fulhu Thuthu Foundation (AFTF). The State Electric Company (STELCO) also provide water services in some islands, together with electricity. No information on the financial viability and service levels of these organisations was shared.

In Pakistan, with WB technical assistance, a Water and Sanitation Service Company (WSSC) was established in Peshwar in 2014. Provincial government then replicated this in 6 other divisional headquarters. Local Government, Elections and Rural Development Department is responsible for policy formulation and service provision in small & medium towns through TMAs/municipalities and it is the nodal department for government & WSSCs communication. Oversight is by a board of directors, a led by a CEO. The WSSCs provide piped water, sewerage and SWM; undertaking design, construction and operation of networks. The WSSCs are headed by a Board of Directors, and mechanisms for customer feedback on services are supposed to function. However, *"neither services are 24x7 nor 100% metered."*

Only Water and Sanitation Service Companies provide sewerage, while Local Government, Elections and Rural Development Department are responsible for surface water drains, though in reality many households connect their waste pipes to public drains. Both agencies deal with solid waste.

FANSA Pakistan (Khyber Pakhtunkhwa) reports that *"financial management in WSSCs is much better and professional as compared to PHED and* [Local Government, Elections & Rural Development Department]", however as we shall read, they are still far from cost recovery.

Residential communal solid waste pit, Bhutan

Balochistan (FANSA Pakistan) does not mention if WSSC's were established in their province but suggests that *"developed countries, such as those in Europe and North America, have established robust WASH infrastructure and service delivery systems. These countries prioritize WASH investments and allocate significant funds to ensure universal access to safe water and sanitation. Comparing budgetary allocations with those of developed countries can highlight disparities and gaps in funding and identify strategies for enhancing resource mobilisation and efficiency in Pakistan and Balochistan".*

Further, despite sharing no evidence of better service provision by the WSSC's, public sector, nor proof of a conducive legislative environment, FANSA Pakistan (Balochistan) recommend that *"opportunities for public-private partnerships to leverage additional resources and expertise for WASH projects, especially in remote and underserved areas"* be explored, even though these are probably the least suited for private service provision.

They also recommend community empowerment *"to actively participate in decision-making processes and project implementation to ensure ownership and sustainability of WASH interventions"* even though residents of formal settlements are usually not expected to operate and manage their own services. This suggests an uncertainty of how to move forward, with community or private management, two options at opposite ends of a spectrum.

3.4 Equity and Accountability

Awareness of national standards is essential if service levels are to be monitored and regulated. FANSA Bangladesh and Pakistan (Khyber Pakhtunkhwa) were the only reports which shared the national minimum standards for safe water supply. According to Bangladesh's Water Rules, 2018 the minimum is 50 litres per person per day for the purpose of drinking, cooking and personal hygiene. Collection should be within 30

minutes and water must meet the national water quality standards as per National Strategy for Water and Sanitation Hard to Reach Areas of Bangladesh 2012. Pakistan's national Policy notes 45 – 120 litres/person/day while the Khyber Pakhtunkhwa provincial policy only mentions the lower limit of 45 litres/person/day.

Bangladesh's minimum sanitation service criteria as given in the 2020 Pro Poor Strategy for Water and Sanitation Sector identifies confinement of faeces against vectors, venting of gases, not shared by more than 10 people (2 households) and safe transfer of faeces for proper processing. For community latrines and public toilets, separate male and separate facilities, properly operated and maintained, friendly for women, children, elderly people, people with disabilities and pregnant women including menstrual hygiene management facilities, and physical security of the superstructure.

Bangladesh's 2020-2025 five-year plan underscores the intervention imperative for *"hard-to-reach areas, climate hot-spots and geographically vulnerable regions" including "chars[63], haors[64], hilly areas, and coastal regions. The challenges are especially severe in coastal regions, which are particularly vulnerable to the adverse effects of rising sea levels, salinity intrusion, freshwater scarcity, and decline in groundwater level".*

Details of other domestic service standards, nor for schools, health or public facilities, or for other services were not shared in any report.

3.4.1 Targeting the unserved

Due to lack of comparable data from the country reports, this synthesis turned to independent sources. SWA notes that Bhutan only reports on poor populations, people living in remote or hard-to-reach areas, and women and Maldives only reports on populations living in remote or hard-to-reach areas. Nepal reports measures to target people living with disabilities, indigenous communities, poor, slums or informal settlements and women while. Sri Lanka reports on people living with disabilities, indigenous communities, poor, internally displaced people and refugees, slums or informal settlements, and women. India has no indicators assessing vulnerable groups for water, sanitation, and hygiene service levels.[65]

In most countries it seems that efforts to reduce service inequalities have not developed beyond national policies or technical guidelines. WaterAid 2018 found that many countries lack specific mechanisms for targeting the unserved. (Table 11)

Country	Poor populations	Remote or hard to reach	People living with disabilities	Women	Informal settlements or slums	Population with high burden of disease	Indigenous populations
Bangladesh	✓	•	•	•	•	✓	✓
Bhutan	•	•	•	✓	•	X	•
India	✓	✓	✓	✓	•	✓	✓
Maldives	...	...	...	...	...	...	...
Nepal	X	X	X	X	X	X	X
Pakistan	•	•	X	X	•	✓	•

√ Government, ODA and non-ODA expenditure reports are available.
• Some reports available.
X Expenditure reports are not available.

Table 11: Equity in sanitation: specific measures in finance plans to target vulnerable populations[66]

Along these lines, Bangladesh's 2020-2025 five-year plan and Perspective Plan 2021-2041 identify three priority areas for public investment:

- Extremely (hardcore) poor households
- Households living hard to reach, geographically vulnerable and hilly areas
- People living in urban and rural slums

63 Sand/ sediment islands at river mouths,
64 Marshy/ low lying areas below sea level
65 SWA, 2022, State of Water, Sanitation and Hygiene Profiles_Bhutan, India, Maldives, Nepal, Sri Lanka
66 WaterAid, 2018, Table 7

Similarly, the National Strategy for Water and Sanitation Hard to Reach Areas of Bangladesh 2012 identifies challenges faced by urban slums, many of which are *"located in low-lying areas, making them prone to waterlogging and natural disasters" and "they often lack access to WASH services due to issues of land ownership and gaps in development plans."* The role of community-based organisations is considered crucial for maintenance of community water points and sanitation blocks within the densely populated slums, ensuring effective operation and hygienic conditions. The plan also states that water and sanitation facilities should be climate resilient.

Bangladesh revised their SDG strategy in 2020, focussed on achieving SDG 6 by 2030, *"with a strong emphasis on 'leaving no one behind, for everyone everywhere always'".* The strategy aims to identify households or communities that lack access to basic water and sanitation facilities, "hardcore" poor households, prioritising resource allocation to access safe drinking water and sanitation. Minimum services are to be guaranteed by *"involving them in the decision-making process and giving them responsibility for water sources and sanitation infrastructure management".* Safe water is viewed as a communal resource, sanitation is regarded as a household asset, though community sanitation is a community asset.

Bangladesh measures vulnerable groups for water, sanitation and hygiene service provision and apparently reports on targeted groups including; people living with disabilities, high burdens of disease, indigenous populations, poor populations, internally displaced persons and refugees, slums or informal settlements, and women.[67] However the poorest quintile is 2 to 3 times less likely to have access to safe sanitation and hygiene than the richest, though poverty has correlation to water supply inequalities.

FANSA Bangladesh mentions developing mechanisms for subsidies or public finance for hardcore poor households which do not yet have access to safe water supply and sanitation. Subsidies are expected to target context or area specific technology.

This targeting is particularly important due to the unsuitability of these segments to attract private investment. Recognising that only 45% of urban populations have safe water, and 20% have safe sanitation, FANSA Bangladesh suggests that the lowest two quintiles should be served by public funds, *"implementing the principle of social justice".* They identify two components for subsidy:

- Capital cost – technology and installation
- Recurrent cost – operation & maintenance, and faecal sludge/wastewater management

This would be particularly relevant for sanitation, where correlation between low service level and poverty is seen.[68] The second lowest quintile could be subsidised up to 50% of the capital cost, based upon their ability to pay. The recurrent costs can be transferred directly to sanitation beneficiaries through designing a special social security programme.

Prioritising use of public funds is an equity matter and requires incentives for responsible agencies to deliver services, e.g. targeted subsidies for connection provides the opportunity to generate revenue. According to an OECD 2021 report, *"Bangladesh has used the 2005 Pro-Poor Strategy for Water and Sanitation to identify extremely disadvantaged households whose basic minimum need for sanitation is unmet and to establish strategies to allocate resources to those households".*[69]

Taking advantage of the Bangladesh's national sanitation standards; water supplies can serve up to 5 households and toilets shared by 2; reduces land and investment required to meet the criteria in informal settlements where space and cash are limited. Even so, dedicated projects will need to be developed with earmarked funds and staff to deliver progress to these challenging, but significant, populations.

Bangladesh's 2020 Pro Poor Strategy for Water and Sanitation Sector recommends full subsidy for the 'hardcore' poor; however, they are required to bear full operational and maintenance costs. Proposals of full and partial subsidies will not address the cost recovery problem and thus service sustainability, instead just increasing the burden on public budgets for the foreseeable future. Furthermore, the expectation for communities to manage their own infrastructure is not something that is usually expected of residents of formal urban settlements. Exactly who and how these facilities will be implemented, how land ownership will be addressed is not explained and the modality exacerbates a time and cash cost for those least able to afford it.

67 SWA, 2022, State of Water, Sanitation and Hygiene Profile_Bangladesh
68 SWA, 2022, State of Water, Sanitation and Hygiene Profile, Bangladesh
69 OECD, 2021, p43

However, of 20 specialised projects planned for 2020-2026, none targeted the *"urban poor or slum dwellers even though this category of population has been identified by the 8FYP and the National Strategy for Water and Sanitation Hard to Reach Areas of Bangladesh 2012".*

FANSA Bangladesh also identify the urgent need for safely managed public toilets in upazila, union parishad headquarters, markets and transport hub, to be constructed by local government. However, the suggestion again that NGOs undertake operation & maintenance, including faecal sludge and waste water management provides no details on incentives, how they will achieve cost recovery, or which agency will fund service subsidies.

FANSA Bangladesh identified other groups with low service as those *"living in hills, islands, coastal, and drought-prone and depression (haor) areas".* Specific coastal and marshland settlements were identified, as well as "poverty-stricken" districts. It is unclear how many urban residents these include.

Although FANSA Bhutan mentions Leave No One Behind principles which are addressed in national policies and guidelines, there appears to be no real effort to identify or target the unserved. Specific WASH funding to meet the needs of different groups outside the home, i.e. in schools, hospitals, public places, is not shared. Interventions addressing needs of individuals with disabilities appear limited to CSOs, and involve life-skills rather than financial or technical support for long term functioning of their WASH facilities.

India's data highlights service inequalities in health facilities, tribal residential schools, and public facilities with Tribal residential schools having low water and sanitation levels. FANSA India report that community and public sanitation is usually poorly maintained, *"many community toilets at common or public locations are either damaged, unusable, or only partially functional...The responsibility for managing these systems lies with the community, yet their maintenance has been found to be very poor, which is impacting the overall provision of public services".*

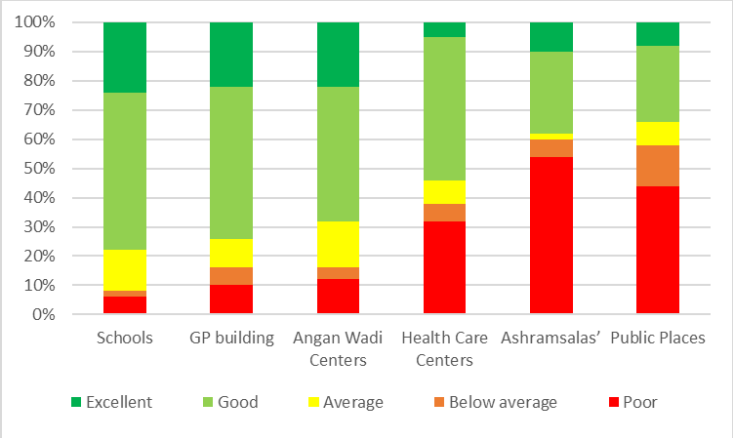


Fig 16: Status of Institutional Sanitation- India

Interestingly, Finance Commission grants received by local government *"have been utilised for retrofitting, installing new taps, and doors to enhance functionality and usability. The availability of these grants to PRIs/ RLBs has significantly improved community sanitation"* even though *"O&M expenses should be covered through user charges, and therefore, 15th FC grants cannot be utilized for meeting O&M expenditures".* This suggests that local governments are struggling with cost recovery in these communities.

FANSA Maldives does not mention any particular social group receiving lower service levels. Though the report mentions "a lack of toilets and amenities specifically for the disabled and children in public places", no data is provided regarding disability prevalence, type or severity, nor the impact of inaccessible WASH on different demographic groups.

Although all the FANSA country chapters have adopted Gender Responsive Budgeting, only Nepal mentioned it in their report. Under this approach, expenditure is classified as "directly responsive" if more than 50% of the budget directly benefits women, "indirectly responsive" if 20-50% of the budget benefits women, and "neutral" if less than 20% benefits women. FANSA Nepal report that ~53% of the federal WASH budget from 2015 to 2021 was classified as "directly benefited", 45.5% as "indirectly benefited" and 1% as "gender-neutral budget".

However, assessment of Gender Responsive Budgeting in Nepal suggests that it is an incidental indicator rather than a driver for project design and social change.[70] Along these lines FANSA Nepal recommend the need for *"studies on how directly benefited gender accountable budgets are contributing to fulfil gaps and disparities in decision making and access to WASH."* Beyond this, Nepal makes no mention of specific populations who experience service inequalities or how they will be served. No data for Gender Responsive Budgeting was available at Municipality level.

70 kathmandupost.com/national/2022/07/06/gender-responsive-budgeting-good-on-paper-poor-on-implementation, Bhul, 2022, Gender responsive budgeting and its implementation efforts in Nepal

As already mentioned, the current Pakistan (Khyber Pakhtunkhwa) mechanism for annual resource allocation based on population, poverty and infrastructure lag does not ensure equitable budget distribution based on WASH needs.

FANSA Pakistan suggest that *"research-informed decision-making/planning for WASH services to cater to the special needs of vulnerable and marginalized populations should be institutionalized"* inferring that despite federal guidelines, the specific needs of unserved populations remain unidentified. This is confirmed by the fact that "Leave no one behind" principles are *"neither covered in the* [Khyber Pakhtunkhwa] *Drinking Water Policy 2015 and nor in the strategic WASH documents like Joint Sector Review"* and their observation that *"operationalising the commitment to* [leave no one behind] *at the country level requires a comprehensive approach with a series of steps, including identifying who is being left behind and why; identifying effective measures to address root causes; monitoring and measuring progress; and ensuring accountability for* [leave no one behind]*"*

Similarly, Balochistan, FANSA Pakistan, observe that *"prioritising equity and social inclusion in WASH programming is crucial for ensuring that marginalized communities, including women, children, and people with disabilities, have equitable access to water and sanitation services. Community-led approaches, participatory decision-making processes, and gender- sensitive programming can empower communities to take ownership of WASH initiatives and ensure their sustainability in the long run".*

Although no data was shared which identified which groups remain unserved, FANSA Pakistan (Balochistan) recommends *"focus on addressing the WASH needs of urban slums and informal settlements where overcrowding and inadequate infrastructure exacerbate sanitation challenges. Targeted interventions in these areas can improve living conditions and reduce the risk of waterborne diseases".* No specific interventions nor how they would be financed are shared.

Sri Lanka's 2019 Household Income and Expenditure Survey data indicates that while the majority (97.7%) of urban residents have access to improved water supplies, the majority (40.6%) of estate residents have no service. Similarly, only ~80% of estate residents use an unshared toilet compared to over 90% of the national population. However, it is assumed that the living situation of these workers 100,000 households, ~4% of the national population) cannot be described as urban.

3.4.2 Creating demand, public accountability

All communities have at least some demands for water and sanitation, however data is generally unavailable on their priorities.

Bangladesh identifies inadequate water and sanitation services for slum and floating communities. Char settlements in Saghata Union have a *"few tube wells installed by the DPHE for public water collection points, but they are inundated during floods and heavy rainfall" and "safely managed sanitation service hardly exists".* Sreemangal municipality has some public toilets for slum and "cleaner" communities, but these are *"inadequate and not managed well"*. Sreemangal's DHPE provides water and sanitation for tea plantation workers however *"open defecation still takes place in tea gardens and streams because of inadequacy of public toilet for the workers".*

Thus, we see that demand for services exists among poor and geographically marginalised groups, but as yet, public WASH service level improvements have yet to be seen.

The 2022 Bhutan Living Standards Survey asked respondents to choose their top 3 areas for government support. Urban respondents prioritised job creation (17.4%), housing (17.3%) and water supply (9.7%) with improved sanitation only scoring 0.9%.

Despite the Rising for Rights project initiative, the issue of customer satisfaction or service provider accountability was not raised in any country report. Although Bangladesh, India, Maldives, Nepal and Sri Lanka have committed to improving government-led multi-stakeholder platforms and implementation of mutual accountability systems, SWA reports that as of 2022only Bhutan has achieved 14%, while 0% of commitments have been achieved in the remaining countries.[71] As with Fig 11, the lack of data for ODA projects indicated in Table 12 is a particular concern.

71 SWA, 2022, State of Water, Sanitation and Hygiene Profiles_Bangladesh, Bhutan, India, Maldives, Nepal, Sri Lanka

	Government		Development partners	
	3.1a A formal government-led multi-stakeholder review mechanism exists	3.1b Routine monitoring systems provide reliable data to inform decision-making in WASH	3.2a Data collected through partner programs feed into country monitoring systems	3.2b ODA allocated to strengthening or developing (in the absence of) monitoring and evaluation systems
Bangladesh	5/5	3/5	2/5	~
Bhutan	5/5	5/5	Insufficient data	Insufficient data
Maldives	1/5	2/5	5/5	Insufficient data
Nepal	4.5/5	1.5/5	3/5	~
Pakistan	4.5/5	3/5	1/5	Insufficient data
Sri Lanka	3/5	4/5	1/5	Insufficient data

Table 12: SWA Behaviour 3-Information and mutual accountability platforms[72]

FANSA Bangladesh suggests NGOs can undertake monitoring and oversight of WASH budget at local and national levels, and promote civil engagement, including sensitisation programmes on safely managed water and sanitation at community level. How NGOs will be funded to do this is not explained, but clearly there is a need for monitoring and accountability mechanisms to be implemented. Whether WASAs produce annual financial reports is not shared.

Maldives did not identify any formal procedures for addressing service delivery accountability though they mention environmental accountability which is to be undertaken by communities. How and where the community are supposed to raise issues is not stated. Formal mechanisms for addressing financial and service level accountability appear to be absent. Similarly, FANSA Nepal's only mention of accountability was to recommend *"more studies on compliance of financing policies while budgeting WASH at the local level".*

FANSA Pakistan (Khyber Pakhtunkhwa) shared that three of seven provincial WSSCs have established *"Citizen Liaison Cells"* which are mandated *"to initiate dialogue with marginalized segment of society to mainstream them in WSSCs services and business areas. That approach is successfully working and WSSCs are ensuring equitable service delivery wherever they can. While in PHED and TMAs there exist no such wing/cell who could represent the voice of poor on planning/decision making table. However recently PHED has started to prepare "master plan" of every district to map out their current schemes, served and un-served areas that will help to develop an investment plan to extend services in the un-served areas".* Details of what activities the Liaison cells undertake, which population segments have been identified as needing support and what solutions have been tried are not shared, not whether WSSCs produce annual financial reports. When the remaining WSSCs will establish similar customer service departments is not shared.

FANSA Pakistan (Balochistan) recommend community empowerment to *"promote community-led initiatives, social mobilisation, and behaviour change communication to foster a culture of hygiene and sanitation".* No specifics are shared of how this will address financial and technical sustainability of WASH services, while the issue of value of water and water use efficiency were not mentioned.

Sri Lanka formulated and agreed national targets following achievement of the MDGs together with national indicators for monitoring performance and proxy indicators for inclusion in the decennial national census. The Ministry of Water Supply is said to have "mainstreamed SDG 6" and established a sector performance monitoring mechanism aiming for achievement of the SDGs by 2030. Exactly what progress has been made in practice is not shared, and where and when the indicator scores are updated is not shared.

However, Sri Lanka's National Water Supply and Drainage Board issues KPI progress in its annual reports, together with financial and operational performance, customer and staff figures. The 2022 Annual Report outlines the organisation's governance structure, including board meeting attendance by members. Of seven board members in 2022, two are women and of 13 senior management members, two are women.

NWSDB report that they established a 24-hour call centre in 2022 which manages complaints and customer relations. Connection fees and bills can be paid by card online or at mobile sales points. E-billing has been introduced in response to paper shortages which also reduces their environmental footprint. SMS are used to send meter readings, confirm connection applications, bill and payment receipt notifications, connection estimates and completion. Digitisation of payments expects to reduce paper use and carbon footprint as well as opportunities for corruption.[73]

72 SWA, 2020, Collaborative Behaviour Profiles_Bangladesh, , Maldives, Nepal, Pakistan, Sri Lanka; 2017 Bhutan
73 economynext.com/sri-lanka-water-board-to-go-digital-with-japan-support-135753/

As a direct consequence of the financial crisis *"NWSDB was able to revise the water tariff in year 2022 following 10 years lapse of last revision. Consumer awareness programs were successfully carried out and no major consumer protest occurred against tariff revision. It was able to increase financial position of the NWSDB."* [74] This suggests that customers value the service being provided, and that NWSDB communicated well before introducing the price increase.

3.4.3 Performance competition

A *"national Clean Green Pakistan Movement was inaugurated by the Prime Minister of Pakistan in November 2019. The Ministry of Climate Change established the Clean Green Pakistan Index that ranks cities on the basis of performance indicators including clean drinking water, solid waste management, hygiene, plantation, and overall sanitation. The cities were to submit monthly reports to the CGPI online portal against the specific indicators. These reports are then evaluated and validated, and the appropriate city rankings are awarded. The pilot phase of the CGPI was implemented in 7 cities of the Khyber Pakhtunkhwa province in 2022".*

Safe Drinking Water	Total Sanitation	Liquid Waste Management and Hygiene	Solid Waste Management
• % of population connected with Water Supply Scheme • % of functional Water Supply Schemes • % of Water Supply free from contamination at source • % of Water Supply free from contamination at HH/ Consumer Levels • % of Functional Water Filtration Plants	• % of Population connected with Sewer System/ Closed Drains) • % of Functional sewer/ drainage system in the city • Functional Waste Water Treatment • Storm Water Drainage System	• % of Functional public toilets at the filling stations • Functional Public Toilets in Markets and Public Places • Functional Public Toilets in Markets and Public Places • Dustbins present in useable form and not overflowing • Functional Toilets in Parks/ Gardens for Males and Females • Drinking Water Facilities Available in Public Toilets	• % of city area with door to door collection service • % of city area with dumping station placed and emptied on regular bases • Permanent Landfill Site • Solid Waste Reuse • Adequate number of garbage disposal vehicles are available and functional • Garbage Disposal Vehicles are Clean and Properly Covered during the Operation

Table 13: Clean Green Pakistan's KPIs for 4 WASH related "pillars"[75]

To ensure active community participation, the CGI programme engaged youth over 115000 as Clean Green Champions to record activities on the official portal. Each of the 5 pillars is scored out of 20, giving a total of 100.

It is unclear what benefits high scoring cities received for their efforts, and what support low scoring cities received.

In 2022 handwashing with soap became a focus message of the program, ensuring first that facilities were available to carry out the behaviour.

Fig 17: CGPI 1st phase, Khyber Pakhtunkhwa city scores 2020[76]

Although intended as a 5-year programme *"the activities and interventions were short lived and remained as long as the CGP last. These interventions were neither internalized in TMAs and WSSCs day to day operations and nor scaled up".*

Whether this is solely a result of political changes is not clear, but it may be useful to see if sufficient data exists to determine if the programme is worth reviving.[77]

74 NWSDB, 2022, Annual Report.
75 cleangreen.gov.pk/implementation-approach. The website is not fully functional, with no data on 'cities ranking'.
76 www.linkedin.com/pulse/clean-green-pakistan-index-cgpi-nadeem-ahmad
77 The programme was supported by WaterAid Pakistan, who presumably have detailed data.

Sri Lanka's NWSDB reports on KPIs nationally, but it is apparent from their annual report that some element of competition exists between regional offices, with recognition and awards for high performing individuals and offices. It is unclear how transparent these systems are, nor how poor performing offices are assisted to improve service levels.

3.5 Optimising existing assets

OECD suggests the following options to make the best use of existing assets and financial resources:[78]

- Improve operational efficiency of WASH services
- Build capacity for economic regulation
- Maximise connections to centralised systems
- Strengthen capacity, monitor effective use of funds

3.5.1 Data

The first step to optimising existing assets is to have data on existing expenditure in sufficient detail to plan. As we have already seen, both technical and financial data is lacking at the level of detail required.

Maldives' National Strategy of the Development of Statistics 2021-2030 is governed by the Maldives Statistics Act which defines procedures for collecting, processing, analysing, disseminating statistics to national standards. Reliable statistics on the economy, society, and the environment should be accessible to all citizens. It is unclear how much progress has been made towards this goal and whether WASH statistics are sufficiently detailed and disaggregated to identify progress towards the SDGs, unserved groups, intervention inefficiencies etc.

Data from the 2019 Household Income Expenditure Survey suggests it is not. According to the 2019 Auditor General's Office report "Performance audit of preparedness for implementation of Sustainable Development Goals" *"managing risks and challenges to secure resources, along with performance indicators and data, are two of the most lacking aspect on the work on SDGs…thus, while mechanisms exist, securing resources for data collection appears to be inadequate."*

78 OECD, 2021, p35

Technical data gap

Bhutan's 2022 Living Standards Survey shows that nearly all urban dwellers (99.8%) have access to improved sanitation facilities. However, when we look in detail by sanitation type, we see that sharing is more prevalent at lower service levels, compounding inequalities.

Further, as noted by Maldives, unsewered sanitation only meets the safely managed criteria if the pit is confirmed as a septic tank and properly managed. Therefore, risks remain since 76% of Bhutan's urban households use septic tanks.

Further, if we look at the water and sanitation coverage by geographical zone, foothill districts have lower water service levels (~99.8%) than mid hills and mountain districts, but mountain districts have lower sanitation (99.4%) than the other geographical zones.[79]

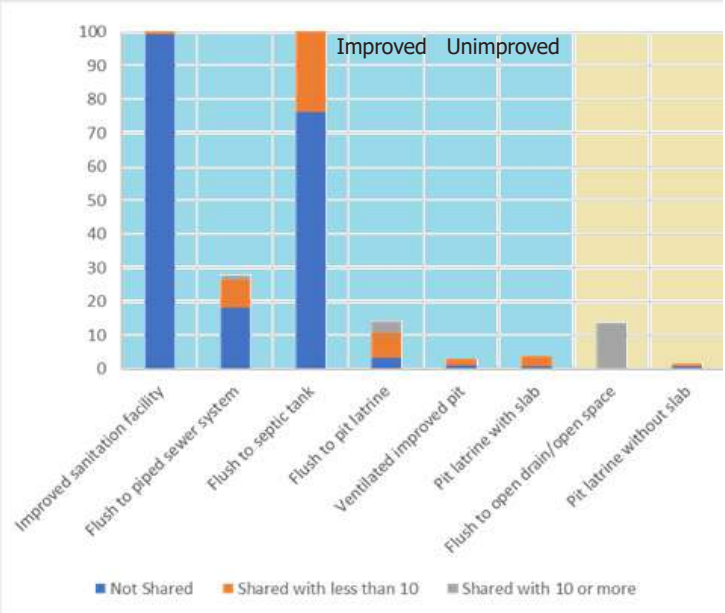


Fig 18: BLSS 2022, Distribution of Households by Type of Toilet by Extent of Sharing with other Households (in %)

Data does not appear to be used to identify service inequalities although FANSA Bhutan states that, *"effective implementation of the "Leave No One Behind" principle in WASH requires accurate data collection and monitoring. Bhutan has been working on strengthening its data collection and monitoring systems to track progress and identify areas where interventions are needed the most".*

FANSA Bangladesh note that many municipalities are unable to serve populations living within their jurisdictions because of limited water capacity and insufficient treatment capacity for surface water. Therefore, a first step is to map water supply and demand *"to trace deprivation in accessing safe water and ensure public finance accordingly".*

Using Pakistan as an example of having national data, but not appearing to use it, FANSA Pakistan report that the SDGs required the Multiple Indicator Cluster Survey (MICS) and the Pakistan Social and Living Measurement Survey (PSLM) to align indicators.

MICS collects information on water access, availability, quality, excreta disposal, and safely managed WASH services, while PSLM collects data on solid waste management, household WASH expenditure, water source and toilet facility type. The Federal Bureau of Statistics undertakes the PSLM annually (2018-19), provinces and districts undertake the survey in alternate years (2018-19, 2019-20 respectively).

In Khyber Pakhtunkhwa (Pakistan), the choice of water supply technology depends mainly on cost and geographical issues. PSLM 2019-20 recorded piped water for 49.1% of urban households in Khyber Pakhtunkhwa and motorised pumps for 35.5%. However, this does not tell us the water source, water quality safety or reliability nor how the infrastructure or continued services are funded. We see that JMP 2023 notes national urban status as 57% for safely managed water supply, but 80% tested positive for E. coli, 96% for fluoride, and 68% for arsenic.

PSLM 2019-20 also records that 84.9 % of urban households have access to basic sanitation, 18% are connected to covered drains, 66% to open drains and 17% with "no system". So, although Khyber Pakhtunkhwa (Pakistan) state that 84% of households are connected to a "sort of sanitation system", 0% of faecal sludge is being conveyed to a safe disposal site.

On hygiene PSLM 2019-20 report that 37.4% of Khyber Pakhtunkhwa households have soap or other cleaning agent at dedicated handwashing places. This compares to the JMP 2023 89.6% figure for urban households having basic handwashing facilities. We see that Khyber Pakhtunkhwa (Pakistan) is not at par with the national averages. Similarly, JMP reports on menstrual hygiene management, and exclusion of 21.8% of women during their menses, while the PSLM does not capture this.

79 BLSS 2022, Table A6.12

Maldives reports SDG progress data, but notes that *"some data, particularly on wastewater treatment sources, is not explicitly provided."* Maldives was the only country to mention environmental data, recognising challenges of limited data, spread across various sources and inconsistently compiled. In 2017 a working group was established to strengthen the collection and dissemination of environmental data at both the national and sub-national levels, identifying key standardised environmental indicators.

Metrics are available for long-term average annual precipitation, renewable water resources, and per capita water withdrawal. However, *"there is a lack of data on critical indicators such as the proportion of wastewater treated, both domestically and by source, and the level of water stress concerning freshwater withdrawal compared to available resources These gaps highlight the need for a more comprehensive dataset to assess wastewater treatment practices and water stress levels for effective water resource management".*

FANSA Sri Lanka share that sector performance monitoring is conducted annually, led by Ministry of Water Supply, with targets discussed at the last National Water Sanitation Coordination meeting in 2017, while school WASH is updated periodically by the Ministry of Education. Sri Lanka's base line for SDG 6 was compiled in 2016 by projecting 2012 national census data, but the 2021 census was not conducted due to the economic situation and was rescheduled for 2023 and due to be completed in spring 2024. Therefore, vital demographic nor WASH progress data is remains unavailable. Furthermore, information on hand washing was not collected until the 2019 Household Income and Expenditure Survey.

However, since NWSDB serves the majority of urban residents, we can use their data as a proxy, and identify the following districts having piped water coverage below 20% in 2020; Kurunegala, Jaffna, Kilinochchi, Mullaitivu and Nuwara Eliya. More than 10 percent of the country's poor reside in Mullaitivu and Kilinochchi districts, which also have high rates of open defecation: Kilinochchi (4.5%), Mullaitivu (3.5%), Nuwara Eliya (2.9%), and Monaragala (2.7%) compared to the national average of 1.6%. That these districts were targeted under the WB Water Supply and Sanitation Improvement Project extension suggest that data is being used to identify the unserved.

FANSA Sri Lanka report that many households of north western province still depend on dug wells while In Jaffna peninsula the main source of domestic water is ground water extracted from limestone aquifers, and *"water availability is affected due to over exploitation and salinity intrusion".* However, whether these populations can be considered urban is not shared.

Of concern is the reduction in piped water connections reported in the NWSDB 2022 Annual report; in Kandy East (-11.16%), Kurunegala (-44.41%) and Anuradhapura (-30.61%). Although these cities may not fall within the FANSA project area, it is important to understand the reason behind these significant reversals in piped connections.

Financial data gap

In order to determine the finances and human resources needed to reach the SDGs, data on existing expenditure and financial efficacy of different technical and managerial solutions is needed. However, data on current expenditure and finance sources is often limited, preventing development of unit costs, expenditure projections and assessment of the finance gap.

SWA reports that Bangladesh, Bhutan, India, Nepal and Sri Lanka have no multi-year and costed finance strategy data. (Table 14)[80]

	Government		Development partners	
	Data are available on taxes, transfers, and tariffs and their contribution to the WASH sector	**Finance plan exists and defines if operations and basic maintenance is to be covered by tariffs or household contributions**	**Data available whether WASH assistance is a) on treasury or b) on budget**	**WASH financing is predictable**
Bangladesh	4.5/5	2.5/5	2/5	5/5
Bhutan	5/5	Insufficient data	Insufficient data	Insufficient data
Maldives	1/5	3/5	1/5	2/5
Nepal	3/5	3.5/5	2/5	4.5/5
Pakistan	2/5	1/5	1/5	5/5
Sri Lanka	2/5	2/5	1/5	5/5

Table 14: Availability of financial data[81]

80 SWA, 2022, State of Water, Sanitation and Hygiene Profiles_Bangladesh, Bhutan, India, Maldives, Nepal
81 SWA, 2020, Collaborative Behaviour Profiles_Bangladesh, Maldives, Nepal, Pakistan, Sri Lanka; 2017 Bhutan

Unit costs for urban water and sanitation together with benefit: cost ratios were calculated in 2010[82] to assist planning for the MDGs, and updated in 2015[83] (Table 15).

	Water					Sanitation					HWS
	Annual capital cost		Annual Recurrent		Benefit: cost ratio	Annual capital cost		Annual Recurrent		Benefit: cost ratio	Annual capital cost
	House connection	Well	House connection	Well		Sewage connection	Septic tank	Sewage connection	Septic Tank		
Bangladesh	2.8/ 276.3	0.8/ 38.9	2.9/	0.1/	1.4/	7.9/64.8	8.1/ 17.3	15.2/	9.6/	2.17/	-/2.2
Bhutan	2.8/ 263.5	0.8/116.5	2.9/	0.1/	5.4/	11.1/194.3	8.0/ 51.9	5.8/	4.8/	5.91/	-/6.6
India	2.8/ 107.0	0.8/ 82.2	2.9/	0.1/	4.2/	11.1/137.1	8.0/ 36.6	5.8/	4.8/	5.11/	-/ 4.7
Maldives	2.8/ 234.1	0.8/173.5	2.9/	0.1/	11.6/	11.1/295.3	8.0/ 78.8	5.8/	4.8/	9.08/	-/ 10.0
Nepal	30.2/ 77.1	6.8/ 34.1	12.1/	1.7/	0.3/	7.0/56.9	11.5/15.2	2.4/	1.7/	1.74/	-/ 1.9
Pakistan	2.8/ 161.4	0.8/ 71.4	2.9/	0.1/	3.4/	11.1/119.1	8.0/31.8	5.8/	4.8/	3.59/	-/4.0
Sri Lanka	2.8/ 192.5	0.8/147.9	2.9/	0.1/	4.2/	11.1/246.7	8.0/ 65.9	5.8/	3.2/	6.36/	-/8.4

Table 15: Unit Cost Data - US$ (2010/ 2015)

WSP/ WB 2016 research found that *"urban areas also have a higher cost per person than rural areas. For sanitation, this is partly explained by the assumed higher-technology requirements in urban areas the costs of basic sanitation exceed those of basic water, especially in urban areas. Hand washing is the lowest-cost service".* Interestingly their data also shows that urban septic tanks with FSM have lower capital costs than pits which provide no treatment. (BD: US$ 17.3/132, BT: 51.9/86.6, IN: 36.6/61.1, ML: 78.8/318.2, NP: 15.2/61.3, PK: 31.8/ 53.1, SL: 65.9/109.9).[84]

Bangladesh's financial data was only available by project and did not identify urban: rural beneficiaries, nor WS:San:SWM:FSM allocation. Fund efficiency by technology type nor intervention modality is not available. Therefore, FANSA Bangladesh's estimate of fund needed to meet the SDGs merely uses historical national data and extrapolates it for the unserved population. Adjustment for specific needs of remaining unserved groups, particular technology solutions, population growth as well as SWM and FSM is not included.

FANSA Bangladesh reports plans to establish WASAs in all remaining divisional cities by 2025, introducing *"robust financial accounting and reporting standards to enable a more accurate estimation of the unit cost of services provided, including capital costs"..."each urban* [local government institution] *will have a computerised Management Information System developed to provide essential information on number of customers, water production and supply, hours of water availability, condition of water and sanitation infrastructure, revenue collection, and discrepancies between revenue and water usage among others".*

However, at present *"it is not easy to disentangle direct WASH allocation and spending from macro-level documents as the city corporations that do not have WASA also spend on piped water and sanitation from their budgets. In addition, municipalities spend money for WASH services in their respective jurisdictions, which cannot be traced from national budget documents".*

Bhutan's district level data for WASH budget allocations and spending does not separate urban and rural interventions and so no comment can be made on budget priorities or fund efficiency. The Desuung programme does not share any financial data, identify urban projects, nor show alignment with local annual plans, while diverting management resources from local line agencies.

FANSA India reports that financial systems at GPs *"adhere to established norms in accounting, book-keeping, and auditing practices, maintaining a strong commitment to financial transparency. Digital database management, Integrated Management Information System utilisation, and computerized record-keeping are common practices across all GPs".*

However, FANSA India also comment that in GP/ PRI records *"detailed breakdowns are notably absent. This lack of specificity extends to the nature of expenditure, whether attributed to labour, materials, or other costs, as well as the unit costs associated with these items. The absence of such critical details within the planning documents or audit reports raises concerns about the potential for overpricing in the procurement of services or the execution of substandard quality works. Addressing this gap is crucial to ensuring transparency, preventing potential mismanagement, and promoting accountability in the utilisation of the allocated grants".*

82 iris.who.int/bitstream/handle/10665/75140/WHO_HSE_WSH_12.01_eng.pdf?sequence=1
83 documents.worldbank.org/curated/en/415441467988938343/pdf/103171-PUB-Box394556B-PUBLIC-EPI-K8543-ADD-SERIES.pdf, HWS capital costs were calculated but water and sanitation recurrent costs were not.
84 WSP/ WB, 2016

National Planning Commission of Nepal 2016 anticipated a cost of NPR 12 trillion (US$ 111b) to achieve WASH targets by 2030. It is not clear the basis on which this estimate was made, whether it includes for population increases, urban migration, etc. However, allocation for the period 2016-2023 has been less than NPR 400b (~US$ 3.5b) and expenditure only NPR 100b (~US$ 0.9b) and urban WASH data was not available for Pokhara and Hetauda municipalities. FANSA Nepal recommend the *"need to develop costed WASH plans to determine financing gap in the municipalities".*

Pakistan (Khyber Pakhtunkhwa) notes that there is *"neither a comprehensive official aggregated (PHED, LGE&RDD and WSSCS) document depicting financial needs of WASH sector to meet SDGs nor any (institutionally) segregated document informing required financial needs for SDGs".* They suggest that the province rationalises the financial system used by the three main WASH institutions, sharing a Management Information System to plan, monitor, evaluate and take financial for coordinated investment.

Although Khyber Pakhtunkhwa note that the 2020-21 Salary Expenditure of local departments was made on the basis of actual flow of financial year 2019-20, the same does not appear to be the case for other budget lines. Furthermore, breakdown of water related expenditure for water, sewerage, drainage, hygiene and solid waste, management is not available. PHED and LGE&RDD only report on "Drinking Water Supply Schemes" in their Annual Development Plan, and budget allocation and expenditure for schools and health facilities is not identifiable. The concerned departments need to agree how allocations and expenditure will be broken down, to enable future costing and assessment of investment efficiency if the SGDs are to be met.

In light of the current inability to clearly identify WASH budgets and expenditure, FANSA Pakistan (Balochistan) recommend strengthening monitoring and evaluation mechanisms *"to track progress, assess impact, and ensure accountability in WASH sector investments. Develop robust data collection systems, indicators, and benchmarks to measure outcomes and inform evidence-based decision- making"* as well as recommending resource allocation *"based on evidence-based planning and needs assessment to ensure optimal utilisation of funds".*

Similarly, Maldives reports that WASH project budgets and expenditures are generic and lack detailed descriptions, *"such as establishment of water and sewerage systems, it is difficult to understand expenditures on different types of activities." Asset management and monitoring is weak due to "incomplete asset registers and lack of assessment of asset depreciation and monitoring. A World Bank project*[85] *is being prepared to be launched soon to improve the asset management situation in the Maldives"* The project aims to improve management of the Maldives' natural resources by developing systems for registering, monitoring, and valuing assets. It is expected that this will ultimately support the Maldives' adaptation to climate change, strengthen its finances, and lead to a clearer understanding of the value and vulnerabilities of its natural treasures. Situation analysis is underway and the project is expected to continue into 2025.

Accordingly, FANSA Maldives notes the lack of reliable data on costs of different WASH activities. Despite many donors supported projects, costs for specific activities are not identifiable, and unit costs are not available for different types of intervention. This prevents assessment of investment efficiency, enabling inefficient modalities to be abandoned and efficient ones to be scaled up.

FANSA Sri Lanka reports that budgets do not *"track the region-wise allocations of the WASH sector resources. This is a serious limitation as it poses a significant constraint in the ability to analyse and determine if sufficient WASH sector resources are allocated to the different regions of Sri Lanka according to their needs".*

NWSDB's annual reports provide metrics on financial and technical issues. For 2022 they report ~3m water connections, of which over 90% are domestic, over 3500 housing scheme connections and ~28,000 sewerage connections. Bill collection efficiency is at 93% and NRW at ~25% while revenue covered ~78% of expenditure, of which 1% was allocated to development. Personnel costs accounted for 35% of expenditure, 33% on 'other', 17% on utilities, 6% on O&M, 5% on treatment chemicals, 5% on "establishment expenses". The number of connections for different provinces and cities is available.[86]

FANSA Sri Lanka writes that WB's 2015-2022 WaSSIP developed unit costs which could be used for budgeting purposes, however the project extension paper notes that *"since interventions across the urban and rural/estate sectors differed in terms of number of beneficiary households, estimated unit costs, and design of the sub-project, assessments were undertaken separately for the sectors".* In any case, all such unit costs became obsolete after the 2022 financial crisis, but this demonstrates how detailed data can benefit planning and budgeting.

85 World Bank Technical Assistance in Public Asset Management of Natural Assets for Maldives
86 NWSDB, 2022, Annual Report

Maldives, Nepal and Sri Lanka mention the use of TrackFin, to track sanitation, hygiene and drinking-water financing. Sri Lanka recommends its use across the various agencies to collect useful data for monitoring and planning and note that *"funds utilised by individual local bodies and INGOs/NGO are not tracked by the Monitoring Section of the Ministry of Water Supply".*

3.5.2 Utilisation of funds

The water supply and sanitation sector need to know current allocations from different sources (tariffs, taxes, transfers etc) and whether funds are being used in the most effective and equitable manner. In reality allocating funds when and where it creates most value can be challenging, and public funds and subsidised tariffs often benefit higher-income households, those who are able to connect to water and sewerage networks.

SWA reports on fund absorption from domestic and donor funds by urban water and urban sanitation projects.[87]

Referring to Table 16, we can see that high utilisation of donor funds is correlated to funding predictability, i.e. donor confidence in efficient fund use.

Countries which reported on fund efficiency generally only reported on utilisation/ absorption and no assessment of efficiency in term of increased coverage, service levels or sustained use was provided, to identify the most effective technology or modalities.

	Funding source	Urban sanitation	Urban Water Supply
Bangladesh	Domestic	●	●
	Donor	●	●
Bhutan	Domestic	●	●
	Donor	●	●
India	Domestic	●	●
	Donor	□	-
Maldives	Domestic	◗	◗
	Donor	◗	◗
Nepal	Domestic	●	●
	Donor	◗	◗
Sri Lanka	Domestic	●	●
	Donor	●	●

- No data □ <50% ◗ 50-75% ● >75%

Table 16: Fund absorption, SWA 2022

As already mentioned, unreliability of external funding can cause uncertainty, creating tensions between donors and government agencies and compromising project selection mechanisms. Large donor funded projects often take place in parallel to government priorities, or are influenced by politics rather than needs. Political instability, limited services provider authority or accountability, public procurement bureaucracy, seasonal working periods which prevent construction completion by end of the fiscal year all affect fund efficiency.

SWA scores 4 indicators for strength of national financial systems (Behaviour 2):

	Government		Development partners	
	2.1a Defined public financial management and procurement systems that adhere to broadly accepted good practices	2.1b Budget and expenditure reporting enables the number and cost of civil servants working at central, regional and local levels to be estimated for different sectors	2.2a Adhere to country planning processes and policies	2.2b ODA allocated to strengthening country systems compared to WASH infrastructure projects
Bangladesh	2/5	3/5	0/5	1/5
Bhutan	4/5	3/5	No data	No data
Maldives	2/5	2/5	No data	No data
Nepal	2/5	2.5/5	No data	No data
Pakistan	1.5/5	4.5/5	No data	No data
Sri Lanka	No data	No data	No data	No data

Table 17: Strengthen and use of country systems[88]

Although WASAs have received more than half of the WASH budget consistently since 2019-20, FANSA Bangladesh report that allocated budget for WASA and WASH budgets in general are "heavily unutilised". For the period 2016-2022 only between 25-45% of the national WASH budgets was used, and only between 12-40% of WASA budgets

Therefore, as already noted, it is not surprising that water and sanitation service levels in rural Bangladesh are higher than in urban areas and clearly central government will be reluctant to assign funds if it is not being used effectively.

87 SWA, 2022, State of Water, Sanitation and Hygiene Profiles_Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan
88 SWA, 2020, Collaborative Behaviour Profiles_ Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka; 2017 Bhutan

Bhutan's annual fund utilisation data by local governments for the period 2013-2023 indicates nominal increase in fund utilisation over this period (87%-93%), apart from 2020-2021 (85%) which was presumably affected by COVID. Specifically for water supply (but not disaggregated for urban: rural), only 3 districts utilised more that 80% of the allocated funds for the five-year period, and 11 out of 20 districts did not achieve 50% utilisation.

There is no breakdown available of fund utilisation for sanitation, and so we cannot comment on the efficacy of sanitation investments. However, we see that the proportion of funds considered necessary to meet the SDGs remains heavily weighted towards water, with sanitation only accounting for 6% of the estimated fund requirement even though FANSA Bhutan note that *"while the water sector, including for drinking and irrigation purposes received high priority during the 12th five-year plan as well in the past subsequent plans, the sanitation and hygiene did not receive similar support".* Therefore, although the SDG is almost achieved, there appears to be a capacity problem, even if Nu 2.12b is provided as suggested in section 4.2.1.

FANSA India share that federal Finance Commission funds are released twice a year *"based on timely submission of certain details and documents in prescribed formats by the GPs". Available data for the current five-year plan shoes that "in the first year of the five-year plan, all 50 surveyed GPs received 15th FC grants. However, in the second year, the coverage decreased to 92%, and by the midpoint of the third year (September 30, 2023), only 34% of the GPs were covered". They speculate that this is because "PRI/GPs are not submitting grant utilisation certificates and audit reports on time through the eGramSwaraj portal".*

Similarly, *"grant utilisation showed a declining trend in the years following the release of funds. While the first year saw 80% of the released amount being utilised, this dropped to 75% in the second year. About 56% of the released amount had been utilised by the end of the first half of the third year".* A total of INR 27,585 Crore (US$ 3b) in tied grants has been released to PRIs over the first half of the current five-year plan, but only INR 8,721 Crore (US$ 1b) has been utilised for 100,400 households, a *"suboptimal rate of 32%. The nodal agency, DDWS, needs to ensure a smooth flow of grant releases and effective utilisation by GP/PRIs within the stipulated time frame".*

Therefore, FANSA India note that despite the potential of the unprecedented financial commitment to WASH *"PRIs appear to underutilise these funds due to various gaps in the administrative system. These gaps include insufficient knowledge on provisions, limitations in planning and execution capacities, a lack of awareness on the policies and priorities of state governments, and challenges related to public pressure, demand, and the effective utilisation of funds".*

Data from the Maldives' President's Office indicates that for 2019 to 2025, only 78.5% was utilised. Maldives notes that *"poorly designed and constructed facilities lead to frequent repairs, putting further strain on resources".* Although not mentioned in other reports, this issue affects many countries where water and sanitation systems are designed by one agency but then handed over to another or to communities for operation and maintenance. Design and construction agencies often minimise costs by removing redundancies necessary for effective management and maintenance, as well as compromising on materials and workmanship quality, making sustained O&M by non-technical bodies difficult.

Over the period 2016 to 2021 Nepal's federal government average utilisation of the WASH budget was 63%, however there is a downward trend since federalisation, ~80% utilisation in 2016/17 but only ~58% in 2020/21. The utilisation of domestic funds between 2016-2021 was higher than of ODA, at 74% and 46% respectively.[89]

In the FANSA Nepal project areas, *"Pokhara metropolitan city utilised 44% of the WASH budget with 40% for sanitation and 44% for water supply and Hetauda Sub metropolitan city utilised 46% of the WASH budget, with 31% for sanitation and 52% for water supply in 2019/20 to 2020/21"* which is much lower than the SWA fund utilisation estimate. Furthermore, both municipalities' WASH utilisation was lower than their overall utilisation (77% Pokhara, 85% Hetauda) which suggests a particular problem in the sector. Consequently, FANSA Nepal recommend the need for *"increase in absorption capacity of sector"* but do not identify any specific solutions.

Pakistan (Khyber Pakhtunkhwa) supported by Ministry of Climate Change and UNICEF, has conducted two WASH Joint Sector Reviews since 2017 using UNICEF's WASH Bottleneck Analysis Tool. The tool facilitates joint identification and prioritisation of bottlenecks coupled with action plans for their removal. It is unclear what progress has been made to address issues identified by the Bottleneck Analysis Tool.

89 washmatters.wateraid.org/sites/g/files/jkxoof256/files/financing-factsheets-for-wash-in-nepal-2022-23_0.pdf

FANSA Pakistan (Khyber Pakhtunkhwa) comment that multiple funding disbursement streams and public financial management systems makes consolidation of WASH allocations and expenditures almost impossible. It is not segregated by water, drainage, sewerage and hygiene, nor provides the level of detail required to assess investment efficiency. Presumably, the existence of multiple disbursement streams is also not financially efficient.

Since 2014 the expenditure of Khyber Pakhtunkhwa's Public Health Engineering Department[90] has rarely exceeded the annual allocation, though no data is yet available for 2021 and 2022. 2019's expenditure was only one third of allocation, presumably due to COVID, while 2022-2023's allocation is almost three times the previous years, though no explanation is given for the increase. Fund allocation should transparently reflect performance but also support weak agencies, with financial capacity building of both public and private service providers a priority.

Conversely Balochistan (Pakistan) report that WASH budget utilisation for 2022 was 86%, from 83% in 2021, 55% in 2020, and 57% in 2019. Over the past four years, the utilisation of the current budget for WASH services has consistently exceeded 94%. This is also reflected in a general improvement in utilisation of the development budget, from 39% 2019 to 78% in 2022 suggesting *"a focused and efficient allocation of resources toward the development and enhancement of WASH infrastructure and services".*

The proportion of non-development funds is also a concern. FANSA Pakistan notes the proportion of water supply funding for 2018-2023 allocated to non-development costs ranged from 46-63% of the budget. This is significant when the water supply allocation was only 1.45-3% of the Annual Development Plan for the same period. As mentioned elsewhere, Pakistan appears to have high HR costs, compare to typical government allocations for HR.[91] In addition it is unclear how the remaining 'development' allocation is divided between new construction, O&M and rehabilitation/ upgrade.

For the period 2018-2022 the Sri Lankan government's contribution to WASH as a proportion of total sector funding has reduced from ~30% to 16%, and the number of new water connections achieved compared to the annual target has dropped from 82% to 48%. In 2021 Ministry of Education allocated for LKR 1100 m for WASH in schools and fund utilisation was LKR 850 m.

The economic crisis in Sri Lanka interrupted the planned 2020-2025 Water for All Project, however NWSDB obtained the Cabinet approval to implement Capacity Enhancement and Distribution Expansion Project which includes some of the planned Water for All projects, "*designed for gaining maximum benefit out of the available limited finances to ensure social welfare, improved health standards, enhanced quality of life, while contributing directly to the economic revival and growth of the country".*

FANSA Sri Lanka note that on average NWSDB's takes at least 5 years to complete major projects *"due to time taken to securing water rights, land acquisitions and procurement issues"* and thus benefits in terms of coverage cannot be claimed immediately. Further, although NWSDB's financial accounting seems far advanced of many other agencies, their 2022 Annual Report reveals that there are many financial issues which remain far from perfect; incomes and assets not properly accounted for, unclaimed debts and loans, unreconciled financial anomalies, amongst others.[92] This means there is still scope for improvement, both financially and in terms of project management, in order to increase fund efficiency and cost recovery.

Recent ODA to local government agencies for major WASH projects included the ADB supported Greater Colombo Waste Water Management Project which received ~40% the local government funding for the period 2021-2023. JICA's Rural Infrastructure Development in Emerging Regions[93] provided 23%, and ADB supported Local Government Enhancement Sector Project (Pura Neguma)[94] accounted for 21%. All three of these projects suffer from financial and technical management issues, therefore one has to question the value of the claimed benefits, i.e. 16,580 households connected to water out of a target 83,420 families. ADB's regular extension of their project, now standing at 8 years, discourages financial accountability and efficient use of funds.

90 Which serves both rural and urban areas.
91 ourworldindata.org/government-spending
92 NWSDB, 2022, Annual Report
93 Project objective was to raise living standards through improvement of basic infrastructure, from 2017-2021. The audit of 2017 indicates numerous implementation issues; failure to hold steering committee meetings, delays in design, construction and rehabilitation of roads, irrigation systems and water supply improvements together with associated cost overruns. www.naosl.gov.lk/web/images/audit-reports/upload/2019/project/4_IV/Rural-Infrastructure-Development-Project--E.pdf
94 This project supported various interventions in areas affected by chronic kidney disease from 2012-2023 including a 8 year extension. Only some activities were relevant to the WASH sector. The 2017 and 2022 audits indicate numerous implementation issues; failure to hold steering or audit committee meetings, poor construction quality and supervision, failure of contractors to commence work after contract award, failure to operationalise completed WS infrastructure or WS related equipment. It appears that a number of proposed water supply projects were not feasible for technical or environmental reasons and were dropped. www.auditorgeneral.gov.lk/web/images/audit-reports/upload/2017/Projects/4th_i/Local-Government-Enhancement-Sector-Project-Pura-NegumaE-.pdf, www.auditorgeneral.gov.lk/web/images/audit-reports/upload/2022/Projects/4-xv/Local-Government-Enhancement-Sector-Project-Pura-Neguma-E.pdf

3.5.3 Improve operational efficiency of WASH services

A major theme of the country reports is cost recovery. Financing strategies should drive investment decisions, specifically operation and maintenance of water infrastructure, and target affordability issues in communities where access to finance is limited. Service providers require performance incentives and independent economic regulation.

Professionalised management attracts finance, both public or private. Reliable service levels strengthen willingness to pay and the ability to increase tariffs. Increased customer connections should yield benefits from economies of scale, reducing operating costs as well as increasing revenues.

WaterAid found that 2018 tariff levels were far from even meeting operating costs in most countries (Table 18).

	Operating and basic maintenance costs are covered by tariffs				Sufficiency of financing to reach national targets			
	Sanitation		Drinking Water		Sanitation		Drinking Water	
Country	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Bangladesh	X	...	✓	...	X	X	•	•
Bhutan	X	X	X	X	•	X	•	✓
India	X	...	•	X	•	✓	X	X
Maldives	X	X	•	•	X	X	X	X
Nepal	X	✓	✓	✓	X	✓	•	•
Pakistan	X	✓	X	✓	X	X	X	X
	√ Covers 80% of costs. • Covers between 50-80% of costs. X Covers less than 50% of costs				√ More than 75% of what is needed. • Between 50-75% of what is needed. X Less than 50% of what is needed			

Table 18: Financial sustainability[95]

Some standard performance metrics have already been mentioned, but include both technical performance indicators: NRW, pollution incidents, regulation compliance; WQ, EIA, as well as customer indicators; payment options, reduced consumption.

Tariffs and pricing mechanisms

Tariffs and charges are not only a source of revenue, but support policy messages.

Tariff setting is a complex and often political issue. High tariffs may result in reduced water use, changed water behaviours, e.g. sourcing water from potentially unsafe sources, leading to reduced revenues and possible health consequences.

Affordability concerns can be addressed outside of the tariff system, water bill, through targeted social measures such as cross-subsidies between users or urban: rural, where service providers aggregation allows financial transfers. Tariffs in tourist areas may be seasonal, reflecting peak demand. Sophisticated tariff structures require a lot of information which may not be available, and may benefit higher income households who can afford water-efficient devices, and disadvantaging the poor.

Water bill revenue should be earmarked for service operation and maintenance, and if possible, to improve resilience and service levels. Economic regulation should ensure that operator delivers services efficiently, to the required standard. Service providers may have the autonomy to restrict service to non-paying customers, without breaching the human right to water.

As already mentioned, charges for irrigation water are often absent, despite the risk of over-abstraction and pollution. In India and Pakistan, all capital costs and part of O&M costs are subsidised by state agencies which

95 WaterAid, 2018, Table 5

undermines the value of water. In fact, greater user contributions are needed for irrigation infrastructure costs to generate revenue and incentivise water efficiency.

Bangladesh's 2020-2025 Five Year Plan notes that *"municipalities can significantly enhance their capacity by implementing effective cost recovery policies that follow the principles of beneficiary and polluter pays"* but recognises that demand for water and sanitation services surpasses the capacity of municipalities, particularly in small towns.

Bangladesh notes that Pourashavas have the authority to impose taxes for sanitation services and policies provide guidance on how rates should be determined, based on volumetric pumping rate and other considerations. The Pro-poor Strategy for the Water and Sanitation Sector in Bangladesh 2008 notes subsidy provisions for the "hardcore poor". FANSA Bangladesh points out that City Corporations are empowered to establish fees and charges for FSM, but to do this they will need to develop emptying and transportation business models, including tariff structures.

FANSA Bangladesh share that WASAs and municipality operational cost recovery is minimal. The Second Perspective Plan 2021-2041 aims to revise pricing policies *"to mobilise funding for new investments and promote efficient water use, which would include water and sanitation pricing policy to achieve full operating cost recovery by FY2020, and full capital cost recovery by FY2031. However, the target of FY2020 has not yet realised".* Bangladesh recognises that certain population segments are more suited to be served under private models than poorer communities.

Bhutan states that service sustainability is a problem *"due to the lack of effective resource recovery mechanism like standardized tariff regulation at national level the per capita government investment on water supply and sanitation in Thromde is approximately Nu 4,500 annually. However, the average revenue generated from the Water and Sewerage Charges is approximately Nu 1500 annually"* i.e. only recovering a third of investment.

Tariff collection for sanitation is currently included in the metered drinking water bill. 50 % of the water bill is allocated for city sewer and solid waste management. The water bill rate is Nu 4.35/1000 litres for domestic areas and Nu 11.6/1000 litres for commercial areas. FANSA Bhutan identify the need to revise the tariff system as one of the challenges to WASH.

FANSA Bhutan also notes that a *"significant portion of the government-installed past WASH facilities have encountered challenges. The possible reasons for such glitches could be due to poor planning and low-quality designs of the infrastructures and the materials used, as well as insufficient oversight during construction and installation".* This is not surprising when infrastructure is procured under "lowest bid" modalities by agencies which do not have responsibility for subsequent operation and management.

Furthermore, FANSA Bhutan notes that *"inadequate maintenance by the beneficiaries could have contributed to these challenges. Given this challenge, it is crucial to establish effective systems and provide capacity-building support to planners, designers, field implementers, and those involved in monitoring and evaluation. Allocating resources for this purpose is an indispensable element of improvement".*

Even though formal urban communities are not usually expected to operate their own systems, a burden typically limited to rural areas, the issue of community management in informal settlements seems to be considered acceptable.

In parallel FANSA Bhutan suggests the need to *"raise public awareness about the importance of WASH and the need for adequate financing. Engage the public in advocacy campaigns that inform them about their rights to clean water and sanitation and at the same time the responsibility and accountability that they should bear".* Both WASH service charges and advocacy are necessary to increase the public value of water as well as funding allocations for long term sustainability of infrastructure investments.

FANSA India report that *"there is a notable gap in* [Village Water and Sanitation Committee]*'s ability to mobilize community contributions and enforce user charges, which are pivotal functions for VWSCs. Building these capacities is essential to fortify the VWSCs and enable them to fulfil their roles effectively in the future"* and that *"responsibility for managing these systems lies with the community, yet their maintenance has been found to be very poor, which is impacting the overall provision of public services".*

Once again, we see marginalised communities being expected to undertake technical and managerial responsibilities, a time and opportunity cost, which is not usually expected in formal urban settlements.

Maldives reports that over WASH revenue from water extraction/dewatering is collected by the Utility Regulatory Authority and Maldives Water and Sewerage Company collects charges. But the combined revenue of licence fees and sewerage charges only covers 10-20% of annual WASH expenditure (2017-2023 data) incurred by local island governments and other agencies. The last government in its last period started many projects, included those financed by loans, which was not common previously. As a result, in 2021 and 2021 revenue dropped to <5% of (the increased construction) expenditure. It is unclear if licence fee and sewerage charge profits are channelled back to WASH or to general treasury.

The state-owned water utility FENAKA has *"not made profits."* Although Maldives mentions tariffs collected for water, the rate is not given. There is also monthly flat rate, but no tariff for wastewater convenance and usually no waste water treatment before discharge into the sea.

Although FANSA Nepal recommend that *"WASH sector ministries and local governments to prepare clear strategy for an efficient and effective mobilisation of 4T (Tax, Tariff, Transfer and Trade) as part of strengthening financing system"* they provided no information on current WASH tariff mechanisms, nor NRW, bill collection rates or other standard metrics. Value of Water and Willingness to Pay level are unknown, as is governments' general ability to collect taxes and principles of reallocation to essential utilities.

Khyber Pakhtunkhwa (Pakistan) also reports that only ~15% of households pay for water according to national 2018-19 data, and pay on average 292 PKR/ month. As noted in the Policy synthesis report, Khyber Pakhtunkhwa Tehsil Municipal Administrations continue to lack technical and financial operation and maintenance capacity. Billing and collection efficiency of public agencies is very low (10-20%), provincial PHED is only recovering <10% of its expenditure. They attribute this to unrealistically low tariffs and lack of incentive or accountability for service providers to recover costs, resulting in annual financial losses which have to be subsidised by provincial authorities.

PHED charge a flat rate of 200PKR and 400PKR/ month for domestic and commercial customers respectively. Insufficient revenue collection for cost recovery together with failure to allocate O&M budget has led to low performing services. FANSA Pakistan (Khyber Pakhtunkhwa) note that PHED lack basic data on connected customers, relies on manual billing & collection, and that poor staff accountability, low administrative and political will are significant barriers to financial and infrastructure sustainability. PHED data for other WASH services is not shared.

Regarding WSSCs, Pakistan (Khyber Pakhtunkhwa) advises that even Pakistan's largest water utility meets less than a sixth of its annual expenditure as revenue and adjustment of charges would require consultation with the provincial Water Resources Regulatory Authority. Tariffs are *"based on the size of plot rather than water consumption as there is no metering. The smallest size house (3 marlas, 75 sq meter) has a bill of 300 Rs/month (US$ 1.07/month) irrespective of water consumption". Bills are issued quarterly and "customers are given 20-30 calendar days from the date the bill is generated to pay... a follow up procedure is followed for recovery of outstanding amounts".*

For the 5 Khyber Pakhtunkhwa WSSCs for which data was provided, revenue ranges from 10-28% of expenditure, with Kohat and Mardan the lowest and Abbottabad the highest. Peshawar has the highest number of connections (~77,700) while Mardan has fewest (~4,500). Therefore, it makes sense that Mardan also has highest expenditure per connection (0.07, but Abbottabad and Mingora both had lowest expenditure/ connection. Bill collection ranges from 23% (Peshawar) to 62% (Abbottabad). Abbottabad and Swat's WSSCs have a working ratio; the proportion of operational expenses to operational revenue (PK_M Sector Investment Status, Pos. 250); of less than 4.0, while Khat and Mardan's are greater than 10.

Admin/ head office costs account for 7-14%, salaries for 27-51% and electricity 37-56%. Repair and maintenance accounts for 2-14%, while there seems to be almost no spending or no data on materials. Despite having more than double the number of connections than the next largest WSSC, Peshawar has not been able to capitalise on economies of scale, except on admin costs, with highest water cost/ capita and second highest cost/ connection. Electricity competes as the largest expenditure in Pakistan (Khyber Pakhtunkhwa) due to reliance on tube wells coupled with the relatively high cost of electricity. FANSA Pakistan comment that *"this leaves negligible amount/ cushion for repair & maintenance contributing towards deterioration of services".* However, technical solutions to reduce electricity costs, such as solar, would have a detrimental impact on extraction of non-renewable ground fresh water.

For comparison, data from the 2011 the International Benchmarking Network Water Supply and Sanitation Performance Blue Book[96] is shared for the available countries (Table 19):

	BNET Indicator	Bangladesh 2009	Bhutan 2004	India 2009	Pakistan 2006	Sri Lanka 2006
Operational efficiency	Electrical energy costs vs. operating costs (%) (share of energy cost as % of operational expenses)	39	-	38	-	25
	Nonrevenue water (%)	35	46	41	40	34
	Nonrevenue water (m3/km/day)	181.5	68.00	119	67.90	37.5
	Staff W/1,000 W population served (W/1,000 W population served)	0.3	1.3	0.6	-	-
	Continuity of service (hours/day) (duration of water supply, hours)	9.12	13.00	5.2	10.6	20
Financial efficiency	Water sold that is metered (%)	74	-	39	3	-
	Collection period (days)	322	-	200	366	-
	Collection ratio (%)	107	88	82	-	
	Average revenue W & WW (US$/m3 water sold)	0.14	0.06	0.15	0.17	0.22
	Operational cost W & WW (US$/m3 water sold)	0.10	0.04	0.28	0.27	0.22
	Operating cost coverage (ratio)	1.36	1.55	0.55	0.62	1
Production and consumption	Water production (l/person/day)	797	250	193	213	598
	Total water consumption (l/person/day)	108	151	114	97	416
	Residential consumption (l/person/day)	97	102	83	-	275
Poverty and affordability	Total revenues/ service population GNI (% GNI per capita) (average revenues)	1	0	2	-	-
	Annual bill for households consuming 6m3 of water/ month (US$/yr)	7.39	-	6.09	-	-
	Ratio of industrial to residential tariff (level of cross-subsidy)	3.89	0.82	9.32	-	-

Table 19: IBNET Water Supply and Sanitation Performance Indicators

Therefore, despite the purpose of adopting private sector principles, it appears the WSSCs have failed to do so almost ten years after their creation.

FANSA Sri Lanka advises that 95% of the populations who enjoy pipe water supply pay water charges based on national tariff or a scheme specific tariff. *"The 350 urban water supply facilities operated by NWSDB are subjected to national tariff which is set for partial cost recovery which does not cover capital cost recovery".* One key goal for WB's Water Supply and Sanitation Improvement Project extension for the period 2020-2025 is to reduce Non-Revenue Wate to below 15%.[97] How this is being tackled is not shared.

Dealing first with water supply, NWSDB charges higher tariffs to industrial and commercial customers which cross-subsidises domestic users. Bills are based on consumption, with different tariffs for different usage tiers. For water there are 9 tariff schedules depending on user type,[98] of which domestic connections are split between Samurdhi recipients and non-recipients.[99] The monthly service charge and the unit rate depend on consumption levels. The monthly charge increases after 25 units, more steeply for non-Samurdhi households than Samurdhi households. The unit rate also increases steadily but flattens off after 30 units for both types of households, which does not discourage excessive consumption. The connection fee pricing is not included in the Water Tariff Gazette. A fee is charged monthly even if no water is used, and for testing meters at the customer's request.

96 documents1.worldbank.org/curated/en/420251468325154730/pdf/588490PUB0IBNE101public10BOX353816B.pdf
97 WB, 2021, p11
98 Others include public, schools, churches, hospitals, industry, ports, bulk supply.
99 Samurdhi (Prosperity) Programme was launched in 1995 and provides support to households based on means testing. However, it has been assessed as failing to address populations in most need, instead aiding households that do not fit the poverty criteria.

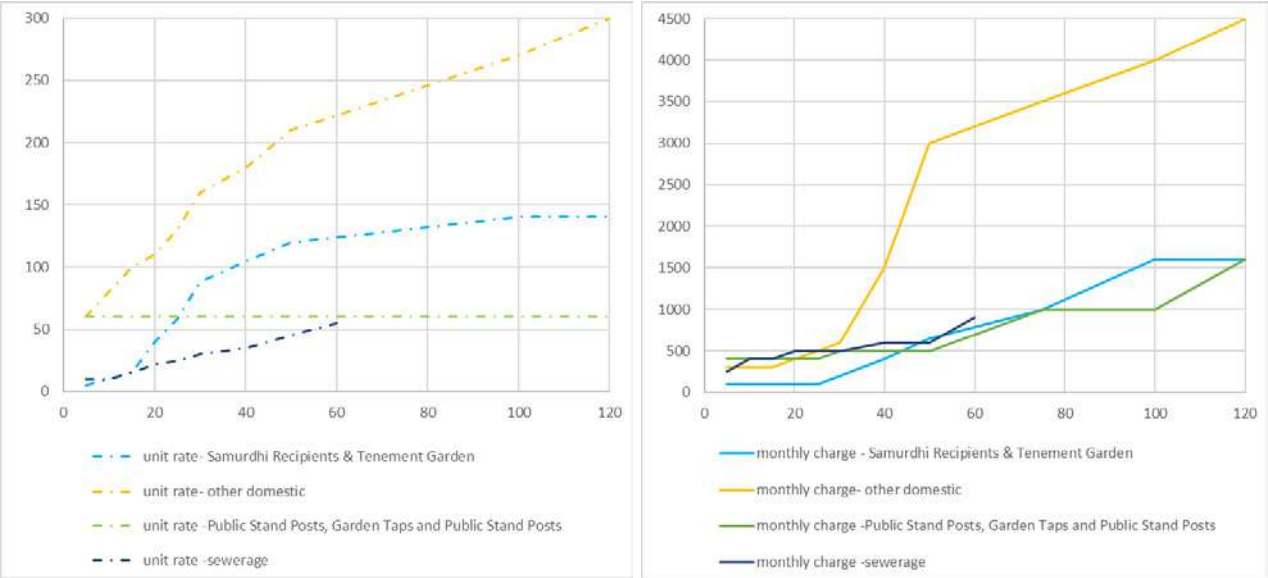


Fig 19: NWSDB water unit and monthly rates in LKR[100]

Although revenue from new water connections was only 4% of income, FANSA Sri Lanka mention that it is one of the main barriers to sewage connection and National Water Supply and Drainage Board plans to provide free or highly subsided connections to promote demand from new sewerage schemes underway in Colombo, Kandy[101] and Kurunegala.

Similarly different sewerage tariff schedules apply for different customers, though domestic users are not split between Samurdhi recipients and non-recipients, presumably because Samurdhi recipients use on-site sanitation. Both the sewerage unit rate and monthly charge increase fairly linearly based on water consumption. Account is made for customers who either do not use NWSDB water supplies or supplement their NWSDB water supply from other sources.

A small discount is given for water bills paid within 14 days, additional charges for bills paid later than 30 days, the right to disconnect and charge for disconnection for any bill remaining unpaid after 30days, as well as charges for reconnection. It is apparent that NWSDB is able to adjust tariffs, as it did in August 2022 and 2023.[102] It would be useful to research the public messaging and tariff setting principles employed by NWSDB at such a sensitive time.

FANSA Sri Lanka notes that local bodies charge for emptying on-site sanitation, but there is no treatment before disposal.

The Sri Lankan Water Quality Monitoring Unit of the Central Environment Authority is responsible for water pollution monitoring including compliance of industrial wastewater. NWSDB has mapped water pollution from poor environmental sanitation and agricultural practices.

Maximise connections to centralised systems

As noted, WSP/ WB 2016 research found that *"urban areas also have a higher cost per person than rural areas. For sanitation, this is partly explained by the assumed higher-technology requirements in urban areas the costs of basic sanitation exceed those of basic water, especially in urban areas".*

To benefit from economies of scale and to reduce service inequalities, connection to central supply and water treatment systems should be encouraged where technology allows, with direct subsidies to households or payment by instalment for connection fees. Increased connection rates support health and environmental protection as well as increased revenue for service operators. Penalising pollution from on-site sanitation can only fairly be introduced when safe disposal options exist to avoid handicapping disadvantaged groups.

100 www.waterboard.lk/wp-content/uploads/2023/08/Water-Tariff-2023-Revised-English.pdf, www.waterboard.lk/wp-content/uploads/2023/08/Sewerage-Tariff-2023-Revised-English.pdf
101 Note however that the Kandy City WW project funded by JICA took over 10 years to complete.
102 www.adaderana.lk/news/92046/water-tariff-increase-was-necessary-to-address-critical-challenges-faced-by-nwsdb-minister

However, due to high levels of NRW, and perceived financial barriers, no country report mentioned this issue from a financial perspective. Further we have seen that Peshawar, which has by far the most connections in Pakistan (Khyber Pakhtunkhwa), has not been able to capitalise on economies of scale except on administration costs.

Maldives aims to connect all households with piped water and sanitation for environmental protection and climate change reasons. However, in some donor funded projects particular technologies have not turned out to be financially sustainable, due to high operational costs and expensive spare parts.

The intent to maximise connections can be inferred from Sri Lanka's NWSDB's Annual reports, whose 2020-2025 Corporate Plan had a target of 327,685. However, due to the financial crisis, this *"target had been amended to 190,000…[and] 153,217 numbers of new connections" were achieved in 2021-22. However, they also note that "metered sales revenue had been increased by 28.80% as compared with the preceding year even the number of new connections had been decreased by 20.24" as compared with the preceding year. Main reason for the sales growth is increasing the tariff charges on I September 2022".* Therefore, the cause of lost connections needs to be investigated as previously noted, for both financial and service coverage reasons.

3.5.4 Regulation capacity

Separating oversight, operations, and regulation is accepted as necessary for improved performance and accountability from local authorities, operators of water services and water users.

- Regulation options include:
- By government, O&M by private/ community.
- By contract, i.e. private sector.
- By independent regulator, i.e. parastatal (which may provide regulation for a number of different sectors)

In most countries, financial and environmental regulatory systems are unenforced, lacking, or are only just being developed.

Bangladesh planned to establish a Water and Sanitation Regulatory Agency during the 2020-2025 five-year plan, whose *"role will be to regulate both public and private utilities that provide water and sanitation services, as well as determine pricing".* ADB is currently supporting a project for creation of a water supply and sanitation regulatory mechanism,[103] but progress on these activities is unknown.

Although Bhutan's Policy Review mentioned different types of regulation by different bodies, details of pollution monitoring, penalties or support to households and industry to reduce WASH related pollution were not shared. The Policy review shared that new buildings need to submit designs, including water, sanitation and drainage, for approval, but did not outline how failure to comply is addressed.

FANSA Bhutan notes that despite the legal framework regarding industrial discharge standard and sewage treatment plant discharge standards, *"there is lack of enforcement and relevant technical capacities to implement. This is further exacerbated by high staff attrition across the board impacting delivery and efficiency."* The regulation compliance regime for other WASH services was not discussed.

Maldives' 2020-2025 Water and Sewerage Strategic Plan includes targets to ensure the Utility Regulatory Authority is functional and for all water and sewerage providers to have operating licenses. This requires formulation and enactment of a water and sewerage law, regulations, policies, standards, specifications and guidelines required under a Water and Sewerage Act, development of national standards for drinking water quality, sewage and wastewater disposal, and regulation of ground water recharge mechanisms. It is unclear what progress has been made on these issues.

Regarding compliance with regulations, FANSA Maldives notes the need for *"regulated and standardised household plumbing to avoid potential environmental health hazards. Several islands struggle with inappropriate wastewater disposal systems, inadequate stormwater management, and untreated wastewater release into the ocean. While the government has a plan to provide sewered systems in all inhabited islands, proper management and maintenance are crucial to minimize the adverse impact on groundwater quality".*

The Maldives Strategic Plan also states that water and sewerage services are supposed to conduct annual financial and technical audits, develop tariff models for water and sewerage services, implement operator licensing mechanisms for operation and maintain water and sewer systems.[104]

103 www.adb.org/node/813141/printable/pdf&ved=2ahUKEwif_YnDn5uFAxWte2wGHXHqB1wQFnoECBwQAQ&usg=AOvVaw1lP4-UWpFeX54L4cSgdtaT
104 MoE, National Water and Sewerage Strategic Plan 2020-2025, accessed at faolex.fao.org/docs/pdf/mdv202322.pdf

However, data from the President's Office on major projects completed in the period 2019-2023 provides cause for serious concern with expenditure of one project exceeding the budget 16 times, one 8 times and another 4 times. Of the 8 projects with cost estimates over US$ 1m, 3 have exceeded the budget, the worst by 2.5 times. Although detailed cost estimates can be found for individual projects, the absence of a rationalised estimating system is a limitation for comparison and *"obtaining comprehensive data is essential for a more meaningful assessment."*

Although a Pakistan (Khyber Pakhtunkhwa) Water Resources Regulatory Authority exists it is apparent that tariff principles and practices are not functioning. FANSA Pakistan note that public service providers in particular *"have no appetite for 'levying tariff' and collecting municipal charges"* but focus on full utilisation of their annual federal funds.

Sri Lanka's Ministry of Environment allocates funds to the Central Environment Authority for Environment Protection Licensing and enforcement, but there is no identifiable budget line for water quality protection. The annual allocation for Environment Protection Licensing is around Rs. 850 million.

The regulation of Sri Lanka's water service industry was assigned to the Public Utilities Commission in 2002, but PUCSL has no authority until a regulatory act is passed. Therefore, at present National Water Supply and Drainage Board has both a service provision and regulatory role.

FANSA Sri Lanka notes that Local Authorities are responsible for;
- taking effective measures to secure that adequate and proper latrines are provided for all houses, buildings and lands within the town;
- providing such public latrines as necessary at all places of public resorts within the town;
- ensuring that all latrines, both public and private within the town are properly maintained.

Public health inspectors are supposed to supervise construction of toilets and septic tanks to the national standards.

3.6 Future-proofing the WASH sector

Asset management approaches make best use of existing resources as well as reducing future investment needs by postponing the need for new infrastructure. Policies which sustainably manage water resources and reduce pollution mitigate future water risks. Interventions include:[105]
- Future-proofing the water sector
- Realistic financing strategies
- Inter sectoral policy coherence
- Manage water competition and extraction
- Flood risk mitigation
- Innovation

3.6.1 Changing service levels

Resilience against future climate and socio-economic change includes accounting for population increases. Design and land use restrictions reduce vulnerability of people and assets, specifically informal settlements often on marginalised land and occupied by poor and vulnerable groups. Unplanned urbanisation increases paved surface area and reduces porous capacity, increasing flood and landslide risks while reducing ground water recharge.

Oversized infrastructure may become dysfunctional in the event of low rainfall or reduced flows due to population relocation, while undersized facilities may be unable to treat sewage to a safe level.

105 OECD, 2021, p41

Water conserving irrigation can reduce the negative impacts of rainfall variability but also encourages cultivation of water-intensive crops, which cannot be sustained during drought, risking food insecurity. Thus, water supply and sanitation must be coherent with other sector plans; agriculture, forestry, urban planning, land use control and flood mitigation.

Population changes

FANSA Sri Lanka predicts a slowdown in population growth, expecting it to stabilise at 22m by 2035. Sri Lanka has 10 cities with between 100,000 and 1 million people, and 48 cities with between 10,000 and 100,000 people. The national census considers Municipal Council and Urban Council populations as urban, while NWSDB consider a population density of 10,000/km^2 as urban for the purpose of water supply. At present over 75% of the population live in rural areas, but urban migration may increase as a result of economic instability.[106]

Climate risks

Despite serious floods affecting Bhutan and Pakistan in the last few years, only a few country reports shared specific climate responses.

No serious mention is made of climate in FANSA Bhutan's report, suggesting that design to withstand climate-related challenges has not been internalised by government. No specific funding nor technical solutions were discussed to endure *"severe weather events or establishing a sustainable water supply system resilient to shifting weather patterns."*

Bangladesh has identified increased groundwater salinity as a key issue in coastal regions *"which disproportionately affects the poor. As a result, approximately 2.5 million people in the southwest coastal region of Bangladesh already experience shortages of drinking water... furthermore by 2050, it is projected that water scarcity may impact as many as 5.2 million poor individuals and 3.2 million extremely poor individuals in this region. In their search for water, the poor are more likely to resort to using water from unprotected freshwater sources like ponds, putting themselves at risk of serious health consequences".*

FANSA Bangladesh notes that *"tailored interventions are necessary to ensure sustainable WASH services in areas vulnerable to climate change. It is crucial to pay sufficient attention to the WASH needs of women and other vulnerable groups who are disproportionately affected by climate-induced challenges" and "20 specialised projects are currently being implemented by the government",* accounting for ~ 15 % of DPHE's ADP allocation for the period 2021-2026. 74% is allocation for coastal and coastal climate-vulnerable areas, 19% for haors, 4% for chars, 2% for drought-prone areas, and 1% for hilly areas. However, none of these projects address urban settlements.

The Ministry of Environment 2020-2024 National Strategic Framework to Mobilize International Climate Finance to Address Climate Change in the Maldives identifies key climate risks including, *"land loss due to sea level rise, coastal floods, saline water intrusion into aquifers, coastal erosion, ocean acidification, coral bleaching, and increased frequency of extreme weather events. Several of these risks overlap with the objectives of the National Water and Sewerage Strategic Plan, particularly in addressing flooding, drainage issues, and climate-related challenges that affect water and sanitation services".*

The 2020-2025 National Water and Sewerage Strategic Action Plan includes two targets for flood mitigation; identify and map flood-prone island, develop and enforce design criteria and guidelines for flood mitigation. However, the plan does not include budget allocations, targeting of climate affected populations, nor water use competition between sectors.

The Action Plan also aims to implement water resource conservation and management plans in all inhabited islands and for 30% of energy consumption for national water and sewerage facilities to be provided from renewable sources by 2023. It is not clear whether the latter target is driven by climate resilience or energy bills, in any case there is a risk that 'cheap' energy encourages over-extraction of non-renewal ground water. Assured budgets for these activities are not found.

However, in 2015 desalinated water had to be transported by ship to 61 islands. Between 2016 and 2020, approx. 63 islands were provided with drinking water during the dry season and again in 2022.

106 *"Although the official urbanisation rate in Sri Lanka is below 20 percent, according to the agglomeration index that uses multiple indicators to measure urbanisation, Sri Lanka's urban population is between 35 and 45 percent"* documents1.worldbank.org/curated/en/639141623636160347/pdf/Sri-Lanka-Water-Supply-and-Sanitation-Improvement-Project-Additional-Financing-and-Restructuring-Project-Paper.pdf

Together with the storage capacity issues mentioned in the Policy review, the cost of water and transportation has increased over time, tripling in the period 2005-2015 (Fig 20).

The seasonal need for water is likely to increase in future, and an alternative solution to the problem is required.

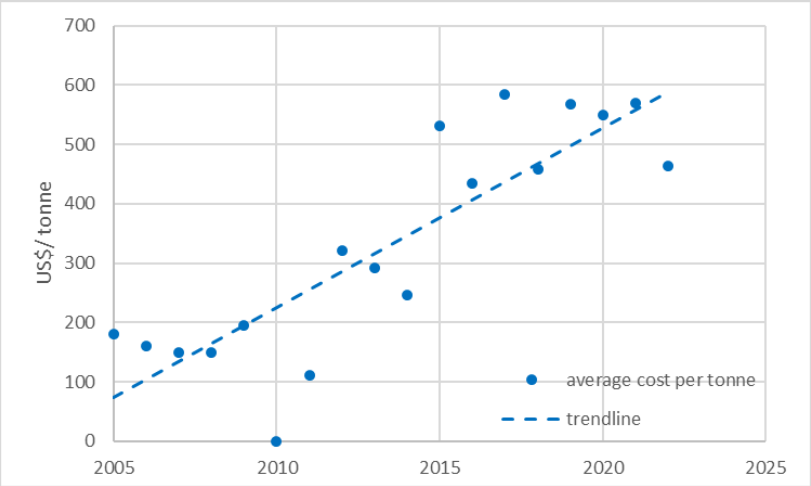


Fig 20: Seasonal shipped water supply unit cost- Maldives[107]

Maldives mentions the "Preparing Outer Islands for Sustainable Energy Development" project, funded by the Green Climate Fund which aims to address increase rainwater harvesting and storage capacity as well as improve climate resilience of water supply infrastructure. At present only 12,000 people on five islands are targeted.

The 2022 floods highlighted the vulnerability on communities and strains on existing water resources from climate change and natural disasters, such as floods and droughts in Pakistan (Balochistan). Thus, the provincial 2022-2023 Public Sector Development Programme budget included a *"substantial realignment of the provincial government's efforts, particularly in prioritising interventions aligned with SDG-6"*including; integrated water resources management & development, watershed management, groundwater management & livelihood improvement, water quality labs, waste water treatment plant, water filtration plants, on-farm water management, clean drinking water and toilets in schools.

FANSA Pakistan (Balochistan) recommend that budget allocations for the WASH sector "should integrate climate resilience measures to address the impact of climate change on water resources and sanitation infrastructure*" but provide no specific examples nor unit costs for such measures. They also suggest prioritisation of "climate-resilient water and sanitation infrastructure to mitigate the impact of climate change on water resources and sanitation systems. Adaptation measures such as rainwater harvesting, groundwater recharge, and flood protection can enhance resilience and ensure sustainable access to WASH services"* though no unit costs of cost benefit analysis of different solutions is shared.

Pakistan (Khyber Pakhtunkhwa)'s adaptation activities *"concentrate on mitigating floods, replenishing groundwater, and expanding the coverage of safeguarded areas. The Ministry of Climate Change aspires to diminish flood risks and augment water recharge at six specific sites within the Indus Basin by the year 2030, with the overarching goal of bolstering the resilience of 10 million individuals and fortifying vulnerable ecosystems. In pursuit of these objectives, Pakistan has submitted a request for support from the Green Climate Fund. Simultaneously, the country has earmarked PKR 6 billion (US$ 36 m) from public funds to initiate activities at three designated sites while awaiting GCF assistance".*

However, FANSA Pakistan (Khyber Pakhtunkhwa) notes that climate-informed WASH indicators are currently not included in WASH sector assessment or monitoring, though *"climate risk-informed joint sector reviews should be conducted annually to keep up with the trends, identify gaps and prioritize funding" and "a mechanism for accountability/ audit of WASH service providers against a set of climate-resilient indicators is required at various levels."*

Pakistan's Policy Review shared that *"comprehensive analysis reveals that exploiting all potential sites in the Quetta Valley would have only a marginal impact on alleviating the magnitude of the problem."* Even so, the Ministry of Climate Change plans to increase water recharge at six Indus Basin sites by 2030, and has submitted an application to the Green Climate Fund. Although FANSA Pakistan shares that PKR 6 billion (US$ 36m) has been "earmarked from public funds to initiate activities at three designated sites while awaiting GCF assistance", progress on this initiative is not shared and it is probably too little too late.

107 MoF, 2023 (ML_Combined, Pos. 192)

Interestingly Sri Lanka's National Water Supply and Drainage Board includes Faecal Sludge Treatment plants under "Water Reclamation" projects in its annual report. Each administrative region reports on water quality enhancements, NRW reduction, energy efficiency activities and wastewater management and staff recognition are given for improved productivity.[108] Under its CSR activities, leakage surveys at schools and other institutions was supplemented by technical assistance, school and community awareness raising on water conservation, and water surveillance at points of use.

FANSA Sri Lanka note that NWSDB also provides water to Community Managed Water Supply Schemes in bulk supply as well as to local authorities and private operators who run water tankers to water-stressed areas. It would be interesting to know whether the economic crisis has put more attention on ground water extraction efficiency or alternatives to tanker supplies, since demand for these are likely to increase in future.

3.6.2 Technology and innovation

Countries where the challenge of meeting SDG 6 is greatest need to identify alternative systems and techniques than traditional WS and sewerage models, if capital and operational costs are to be reduced. Reliance on existing technical solutions limits interest in alternative systems, due to an aversion to abandoning existing assets.

Transition to a circular economy, reusing wastewater or using biogas to run wastewater treatment plants. is necessary, as well as rethinking conventional economics, which fails to value the environment.

Innovations in data collection and communication allow real-time water storage management, monitoring of pollution, and infrastructure operation. It can lower monitoring costs, reduces risks to infrastructure from sudden flow or load changes, aids compliance with regulations and enables flood or storm water attenuation for recharge or recirculation. Controlled urban planning enables incorporation of sustainable urban drainage systems, often be less costly than "hard" engineering alternatives.

Bangladesh's 2020-2025 five-year plan identified particular WASH solutions including elevated drinking water and sanitation infrastructure in coastal areas, desalination plants and rainwater harvesting systems, treatment units for arsenic and iron for tube wells and pond sand filters for surface water sources. However, it is unclear if any progress has been made in practice. FANSA Bangladesh also identifies solar-powered water pumps as solutions for chars, for both drinking and irrigation. However as commented elsewhere, cheap pumping does not address value of water, and is likely to lead to over-extraction of non-renewable fresh ground-water.

Bangladesh also notes that technology solutions are probably required for sanitation in chars, where many households live in poverty. However, FANSA Bangladesh considers such areas beyond both public and private service provision, and rather than suggesting sewerage connections which Maldives opts for, suggests that focus be put on household management, to produce compost which can be used for soil conditioning. How this can be done safely in hot, humid and flood prone conditions is unclear. Further, it exacerbates service inequalities for the poor, whereas formal settlements are usually not expected to spend time and money on managing their own utilities.

As of 2021 Bhutan notes that core areas of 13 of 22 urban towns are connected to sewerage systems, while others mainly rely on onsite sanitation due to difficult geographic terrain or lack of resources, with vacuum tankers providing desludging services.

FANSA India report that of 1,00,400 households surveyed in the 50 GPs, only 26,063 were functional (26%), significantly fewer than official national data of 69%. Similarly in the same households only 40,257 toilets were found to be functional (40%). The issue of sustained management of facilities is essential to reap the benefits of achieving the SDGs. They also report on retrofitting of household latrines, presumably to twin pit, for safer faeces management and reuse potential, may contribute towards more successful household management. The details of how retrofitting of household toilets is funded and prioritised, for social equity, was not shared.

Sri Lanka's NWSDB annual report notes areas of research. They report successful production of sodium hypochlorite from locally available materials for drinking water disinfection, and an LKR 9m annual saving by converting 27 water supply schemes to Sodium Hypochlorite.[109]

108 NWSDB, 2022, Annual Report.
109 NWSDB, 2022, Annual Report.

Sri Lanka's WB supported Water Supply and Sanitation Improvement Project planned to construct twin pit latrines as a minimum service level and septic tanks and soakage pits in areas with high water tables and close to water bodies.[110]

FANSA Sri Lanka identifies a number of areas for research;
- Use of solar panels to direct pump or fill storage tanks from tube wells in dry zone communities.
- Implement bowser service by Local Authorities, supported by NWSDB in drought-stricken areas affected by seasonal rain/GW variations, set up water point within reach of the community.

3.7 Alternative finance sources

Financing options which make use of existing WASH assets and minimise future financing needs can contribute to closing the funding gap.

3.7.1 Existing revenue sources

Most reports did not share details of other sources of revenue for their WASH service providers beyond ODA and water supply or sewerage services. As mentioned in section 4.1, some countries receive funds from anti-terrorism and climate funds, but details of what proportion of their WASH budgets or how funds are targeted was not shared.

FANSA Pakistan reports that water tanker sales as well as direct grants are among other sources mobilised by WSSCs. In 2021, Swat covered more than a third of its expenditure from other sources, while Kohat and Mardan only covered 14%. Mardan, Kohat and Swat's funds from other sources was 40% more than their collected revenue. 4 companies increased their funding from other sources in the period 2019-2021, with Swat's more than doubling. It would be interesting to understand in more detail of the other non-government funding sources being mobilised by Pakistan (Khyber Pakhtunkhwa)'s Water Supply and Sanitation Companies beyond tariff collection.

Although it is inferred that some agencies provide design services as well as equipment hire, the proportion of income from these sources is not mentioned. Only from Sri Lanka's NWSDB Annual report was some information about other revenue streams gathered; metered sales (~80%), bulk sales (1%), bowser supplies (1%), 'main operations' (6%), connection & other main operations (8%), capital recovery (2%), sewerage and ground water (1%), surcharges, penalties etc (2%).

3.7.2 Innovative financing

Infrastructure that does not easily generate cash flows, such as flood protection, will require cross-subsidies or other fund redistribution mechanisms to ensure sustained services. Options include:[111]
- Fertiliser and pesticide taxes reflect the cost of water pollution and water treatment costs
- Stormwater taxes/ discounts on property developers for impermeable surfaces/ flood protection systems
- Similar taxes/ discounts for famers for payment for catchment and water source protection.

In the case of urban WASH, it is important to remember that it is not just an SDG 6 goal, but also SGD 11: Make cities and human settlements inclusive, safe, resilient and sustainable. SDG 11 targets informal settlements, access to basic services, poor and vulnerable communities, reducing adverse environmental impacts of waste, safe and inclusive public spaces, climate and disaster resilience and response.[112] Monitoring and guidance information for SDG 11 can be very relevant for urban WASH and an alternative source for mobilising funds. For example, investment in STPs reduces methane emissions from untreated wastewater in anaerobic conditions, opening possibilities to access carbon credits or greenhouse gas related funding.

110 documents1.worldbank.org/curated/en/639141623636160347/pdf/Sri-Lanka-Water-Supply-and-Sanitation-Improvement-Project-Additional-Financing-and-Restructuring-Project-Paper.pdf
111 OECD, 2021, p52
112 UN Habitat, 2018, A guide to assist national and local governments to monitor and report on SD Goal 11+ indicators

Commercial finance is constrained by investment returns, therefore 'social' investments are not attractive. In such cases blended finance can improve the 'risk return' profile, moving beyond traditional loans and grants, using guarantees, securitisation, currency hedging or political risk insurance to target different risks. For example, guarantees can protect investors against risks of breach of contract, while collective financing can pool financing from different investors, spreading risk.

The WASH sector will probably need technical assistance to develop targeted blended finance solutions.

FANSA Bangladesh identifies the role of the private sector to "bridge this gap", therefore Government will *"establish suitable pricing policies to promote private piped water supply, hygiene and environmentally-friendly household sanitation. Beneficiary Pays Principle can be adopted to determine prices, particularly for the urban middle class population."* Similarly, they suggest that donors can support social enterprises, NGOs and government especially in enhancing capacity and targeting climate hotspots through financial support, technical assistance, and technology transfer. While it is true that donor funding can facilitate alternative financing solutions, this presumes reliability of funding as well as projects which align with government priorities.

Bangladesh's Second Perspective Plan 2021-2041 identifies public sector co-financing for various environmental services. Examples include clean rural water supply, sanitation, public toilets, and bathing facilities implemented through public subsidies to private suppliers or cost-sharing agreements with the community. They anticipate *"significant prospects for cost recovery from water supply, sanitation, and solid waste management".*

Blended Finance to Reduce Rural Sanitation Costs in Bangladesh[113]

In rural Bangladesh, despite high demand for sanitation facilities, households cannot afford to purchase them without paying in instalments.
To address this, a project blended output-based aid and microfinance loans to lower the cost of latrines and spread repayment over a year.

- For households, the subsidy is valued at ~$15 and reduced weekly repayments by 11%.
- Risk to lending microfinance institutions was reduced.
- Loans to small businesses that sell materials and construct latrine construction increased.
- WB technical assistance grants trained entrepreneurs in construction and helped financiers identify and reach poor households.
- The blending is estimated to have leveraged US$ 22 million in household contributions.

FANSA Pakistan (Balochistan) recommended investigation of *"innovative technologies and best practices from successful WASH models to improve efficiency, effectiveness, and sustainability of interventions."*

Sri Lanka's Ministry of Local Government implements multilateral development bank funded projects. Traditionally no revenue is generated by regional or local government but FANSA Sri Lanka note that the *"WASH sector has evolved over the past two decades securing supplementary financing from additional sources not considered before 2010. Using financial resources in the WASH sector more effectively will be essential for achieving the SDGs."*

As noted in the Policy review, the Sri Lankan National Water Supply and Drainage Board has sought financing from domestic and international sources. However, in the past 50% of loans for urban water supply and 100% or sewerage projects was reimbursed by the government. Due to the post COVID economic downturn, all new water supply projects have halted and the policy for future National Water Supply and Drainage Board funding is unclear. It is possible government may require National Water Supply and Drainage Board to shoulder the full value of foreign loans in future.

113 OECD, 2021, p55

4 Conclusion

Along with the report(s) prepared by the FANSA country chapters in their respective context, number of external sources were also used to try and understand the relative context more clearly while synthesizing the report to a regional consolidation. Referring to the discussions above in this report, the following conclusions can be drawn across each of the factors/issues considered while analysing this sector investment status review study report.

4.1 Cross cutting challenges

- Security

The countries report a variety of instability issues from Sri Lanka's financial crisis, to flood and drought in Pakistan, and a refugee influx in Bangladesh. Although other countries did not report on shocks, clearly all need to address inflation and exchange rate fluctuations when planning financing of WASH projects. Risk assessment is one method of prioritising interventions, but requires risks to be valued financially, for which it seems there is presently insufficient data.

- Sector capacity

Some countries are affected by outmigration, particularly of civil service staff and HR capacity is an issue in all FANSA countries, technical, financial and regulatory. However no detailed analysis was shared identifying the critical gaps, nor concrete plans to address it. Pakistan (Khyber Pakhtunkhwa) report recent use of the WASH Bottleneck Analysis Tool, but it is unclear how effective it was in assessing HR gaps and identifying solutions. Implementing cost recovery business models requires a professionalisation of the WASH sector, an issue that is apparently lacking among technical and financial staff.

For example, Pakistan (Khyber Pakhtunkhwa) WASH sector needs to take action both at policy and operational level, particularly regarding financial management. Institutional arrangements focused on delivery require clear roles for service providers together with coherent regulation mechanisms. At present there is no institutional culture of performance measurement in either public or private service providers, and thus no accountability for poor performance nor incentive for improving services levels.

- Politics/ corruption

The issue of corruption and graft was not directly raised in any country report although some referred to problems of political interference. For example, in Pakistan (Khyber Pakhtunkhwa)'s large "block grants" are allocated at the discretion of chief executive of the province, without guaranteeing sector allocation nor targeting needy populations. FANSA Bangladesh alludes to unspecified political sensitivities for private sector to compete with government for social service provision, including WASH.

Both India and Sri Lanka have introduced digital payment systems for various basic services, including water supply, one benefit of which is reduced opportunities for graft.

- Coordination

Coordination is critical to avoid waste of limited funds through duplication or non-aligned activities. For long term protection of limited freshwater sources, coordination beyond the WASH sector is essential; particularly with sectors competing for water use including energy, agriculture and industry. However, evidence of functional

collaboration in the country reports is limited. FANSA can adapt existing SWA metrics on government leadership or discuss Bangladesh and Pakistan's experiences of UNICEF/ SIWI's Bottleneck Analysis Tool to see if it would be beneficial to the project, particularly since scaling up 'business as usual' is not going to achieve the SDGs.

4.2 WASH vision and strategies

- Meeting the WASH SDGs -national cross-party priorities

Nearly all countries have national level policies which infers the importance of WASH in national plans. However, how these policies are translated into funding and cross-party priorities was not clear in the country reports.

Some countries have previously estimated the budget gap to meet the WASH SDGs, but none appear to have allocated funding accordingly. A number of FANSA reports attempted to calculate their own estimates, but most have no urban unit costs, nor account for reaching hard-to-reach groups, upgrade service levels to 'safely managed', nor include for service sustainability. Thus, estimates are generic, based solely on country-wide unit capital cost x unserved current populations.

A 2016 WB report on the costs of meeting the SDGs made 3 key findings:[114]

- *Current levels of financing can cover the capital costs of universal basic service for drinking water, sanitation, and hygiene by 2030, provided resources are* ***targeted to the needs****.*
- *Achieving "safely managed" water and sanitation services requires additional financing on the order of* ***three times*** *current spending.*
- *Sustained universal coverage requires more than capital inflows:* ***financial and institutional strengthening*** *will be needed to ensure that capital investments translate into effective service delivery.*

- Budget allocation policies and priorities

There is a general lack of detailed data allowing clear identification of water, sanitation, SWM, FSM and hygiene budget allocations, or separation of urban and rural financial information.

While the Desuung Water Project allocations, with their focus on water supply and irrigation are commendable, there is a danger of derailing local WASH plans, since the funding is out of proportion with local budgets and project selection is non-transparent.

Nepal's local authority grant systems do not appear to prioritise WASH, nor O&M despite the fact that, as coverage increases, a greater proportion of funds will need to be allocated to sustained service provision.

Pakistan (Khyber Pakhtunkhwa)'s 2015 provincial drinking water policy requires *"at least 10% of the provincial development budget for drinking water"... "but in last 5 years the drinking water allocation (for development) remained between 2 % - 3%".* No allocation principles were shared by other countries for either national or local level allocations to WASH.

In Pakistan, central funds prop up WSSC's who are unable to collect more than 10-25% of their expenditure from revenues. In Sri Lanka, NWSDB's situation is a little better, with revenue accounting for ~30% of annual funds (2018-2023), 15-20% from commercial banks and the balance subsidised by central government.

Even where countries have previously assessed the fund requirement to meet the SDGs, central government has not committed to these figures, and there is a general trend of decline in central allocations rather than an increase.

- Sanitation

Where urban WASH budget data is available, historical prioritisation of water over other elements of the sanitation service chain persists except in the Maldives where budget allocations have consistently prioritised wastewater (90%) over water supply and Nepal's Hetauda municipality allocated between 40-50%/25% of its annual WASH budget to sanitation for the period 2019-2022. It would be interesting to understand Hetauda and Maldives decision making process on this issue, understanding their motives could be beneficial for advocacy in other countries. India was the only country to mention MHM and biogas.

Regionally, the priority remains on exploiting non-renewable water sources, rather than conservation sources, of increasing reuse of grey water, or maximising water recovery from drainage and sewerage.

114 WB/WSP, 2016, The Costs of Meeting the 2030 Sustainable Development Goal Targets on Drinking Water, Sanitation, and Hygiene

- Institutional WASH

Funding and expenditures for urban schools, health or public facilities was generally not shared in the country reports.

- Sustained services

India noted that although Finance Commission grants are not supposed to be used for O&M, GPs were applying for and using funds for rehabilitation and refurbishment of WASH related infrastructure, which demonstrates their understanding for sustained and improved service levels.

Maldives provided the annual allocation for O&M, but with no breakdown for urban: rural, service type, trends in funding, nor details of the most cost-effective interventions.

Sri Lanka's NWSDB Annual report provides information on operational costs.
As the WSP/ WB 2016 report states, *"it is critical to consider the ongoing finances required to ensure the proper operation of these services. Costs of operating new infrastructure will exceed the annual capital cost requirements to meet those remaining unserved*[115]*".*

- Water use competition

Water competition was not mentioned in any country report but is clearly an issue which needs to be addressed in order to set pricing strategies for drinking water and treatment, to maximise water recovery.

Since domestic use is much less than demand for other purposes, extraction charges need to be coherent across all sectors to prevent water arbitrage.

Countries	GDP share of agriculture	Global rank	Available data
Pakistan	22.35	20	1960 - 2022
Nepal	21.06	27	1965 - 2022
India	16.73	38	1960 - 2022
Bangladesh	11.22	53	1960 - 2022
Sri Lanka	8.75	67	1960 - 2022
Maldives	4.92	95	2003 - 2022

Table 20: GDP share of agriculture - Country rankings[116]

The absence of water use data in other sectors; energy, industry, mining, makes it difficult to quantify the value of water with domestic users. Business incentives need to discourage high water consuming and polluting industries; such as beverages and textiles.

The WASH sector needs to coordinate with others to send consistent messages, including with extraction regulatory bodies.

4.3 Current WASH funding sources

- Domestic vs foreign sources

International data suggests that reliance on ODA poses two challenges; donor's priorities do not align with national plans and priorities, and the unreliability of ODA means that projects are planned in parallel, often distracting government departments from planned works when funding gets approved.

Although international information suggests the proportion of ODA is low, lack of detailed data makes it difficult to identify ODA clearly. ODA channelled through national treasuries is often bundled together with 'central allocations' – see Maldives and Sri Lanka.

Furthermore, OECD suggests that ODA may not be targeting countries who need it most, preferring stable countries with conducive governance regulatory and environments, rather than those least able to raise finances.[117]

With regard to domestic sources, details were lacking on the main revenue streams, how to maximise them, or principles guiding fund redistribution to social service sectors.

115 WSP/ WB, 2016, The Costs of Meeting the 2030 Sustainable Development Goal Targets on Drinking Water, Sanitation, and Hygiene
116 www.theglobaleconomy.com/rankings/share_of_agriculture/
117 OECD, 2021, p29.

- Government vs private WASH service provision

Although all country reports supported the theory of cost recovery and private sector business models, in fact the only examples of functioning water supply providers were from para-statal organisations; National Water Supply and Drainage Board in Sri Lanka, Water Supply and Sewerage Authority in Bangladesh and the Water and Sanitation Services Companies in Pakistan. These organisations appear to hold monopolies in their respective countries, heavily subsidised by central government, only achieving partial cost recovery of operational expenses. All capital expenditure appears to be primarily donor funded through major ODA projects. Even though Pakistan (Khyber Pakhtunkhwa) WSSCs were established over 10 years ago, they show only slightly better financial and technical performance than PHED and nothing near what is required for financial and technical sustainability.

No details were shared of any private sector, NGO or CBO management of public facilities in order to recover operational costs, though such modalities are known to exist in Nepal[118] and Bangladesh.[119]

Although FANSA Bangladesh report that private sector participation is not significant as of 2024, due to low connection fees and willingness to pay, compounded by some unspecified political sensitivity to compete with government for social service provision, they suggest that public-private and public-NGO partnerships can supplement municipal capacity to provide sanitation and faecal sludge management services.

Government failure to provide effective services and donor policies which encourage cost recovery may push countries to privatise basic services, but the results from 'developed' countries are mixed, with the poor often not protected. Furthermore, privatisation only functions in strong legal environments, where robust regulation exists.[120]

4.4 Equity and Accountability

- Targeting the unserved

None of the reports describe any current national social security systems and whether WASH support is already provided in connection with these or through other mechanisms. All countries have signed up to use Gender Responsive Budgeting But only Nepal mentioned it and did not discuss whether it has a positive impact on project design and selection.

Although Bangladesh and Sri Lanka identified low service levels for tea estate workers from national data, and India's national data suggest Tribal residential schools also have lower WASH service levels it is assumed that these communities do not live in 'urban' contexts. Other country reports did not use national or project specific data to identify particular urban groups or suggest specific measures to meet their needs.

For example, Pakistan (Khyber Pakhtunkhwa) notes that MICS and PLSM data is available at province and district level, but there has not yet been any effort to use it to prioritise needs. Current provincial mechanisms for annual resource allocation do not support equitable distribution based on WASH needs.

- Creating demand, public accountably

Sri Lanka's NWSDB reports on a number of performance metrics in its Annual Report, but it is unclear if and how customer feedback is elicited. Their 2022 Annual report notes that Customer Care Centre was established in 2022, but does not share details of its activities. Similarly, FANSA Pakistan (Khyber Pakhtunkhwa) shared that three of seven provincial WSSCs have established "Citizen Liaison Cells", but we do not know what they do and how they respond to needs or complaints.

No other country mentioned customer service departments with any WASH service provider, regular publication of performance indicators or any accountability mechanism by which consumers report low service levels to elected representatives or service providers.

Where poverty or technical challenges make private service provision a difficult financial proposition, countries suggested community management of facilities, but did not explain how technical capacity of communities will be strengthened, nor how staff will be paid. The presumption of 'community ownership' is not supported by evidence, and the expectation for communities to spend their time and money on basic services exacerbates existing service inequalities instead of targeting public funding to communities where cost recovery is not most challenging.

118 pokharacentre.org/wp-content/uploads/2023/02/Making-Pokhara-a-Public-Toilet-Friendly-City-1.pdf
119 www.researchgate.net/publication/362536784_Public_Toilets_in_Bangladesh
120 academic.oup.com/wbro/article/33/1/65/4951686,

- Performance competition

Although the National Clean Green Pakistan programme is supposed to rank cities on 5 sets of KPIs, 4 of which relate to WASH, the project appears to have been abandoned with the change in political leadership.

As noted, there appears to be some element of competition between Sri Lanka's NWSD regional offices, with recognition and awards for high performing individuals and offices. It is unclear how transparent these systems are, nor how poor performing offices are assisted to improve service levels.

4.5 Optimising existing assets

- Technical and Financia Data

Lack of disaggregated data is a key issue in all countries, a barrier to analysis of the current situation and planning for the future. Although nearly all reports recognised this, few specific measurable and targeted solutions were suggested, nor how agencies could coordinate their efforts to reduce cost of data collection and streamline indicators.

One specific issue for Maldives, where absolute populations are small, is how 'urban' settlements are defined which is necessary for planning WASH interventions.

FANSA Bangladesh note that mapping of water supply and demand *"to trace deprivation in accessing safe water and ensure public finance accordingly" is needed. Although Pakistan's PHED does not serve urban areas, it "has started to prepare "master plan" of every district to map out their current schemes, served and un-served areas that will help to develop an investment plan to extend services in the un-served areas"* and apparently Sri Lanka's NWSDB has mapped water pollution from poor environmental sanitation and agricultural practice. The Maldives 2020-2025 National Water and Sewerage Strategic Action Plan includes identifying and mapping flood-prone islands as a step towards reducing flood risk.

Pakistan (Khyber Pakhtunkhwa) identifies multiple funding streams as a challenge to identifying WASH allocations and expenditures. Financial systems across the three main WASH service providers could be rationalised, setting performance targets based on standard metrics. Performance audits are required to ensure financially efficiency, and also identify the most effective investment strategies, publishing regular annual financial reports. Similar situations exist in the other FANSA countries and probably contributes to financial inefficiency.

Maldives, Nepal and Sri Lanka mention the use of TrackFin, to track sanitation, hygiene and drinking-water financing. US-AID's WASH-FIN has also been used in Nepal. However, no country shared any particular benefits of actual use these systems. FANSA countries could share their experience of different systems and agree on some basic performance metric to report on. The International Benchmarking Network Water Supply and Sanitation Performance Blue Book[121] provides guidance on a range of metrics and existing data can serve as a baseline for assessing progress.

- Regulation capacity

Bangladesh, Pakistan, and Sri Lanka appear to have no functioning independent water regulator, while the situation in Bhutan and Nepal is unclear. Although Sri Lanka's NWSDB is the de facto water supply regulator, it is also a service provider. Therefore, issues of tariff setting for cost recovery and supporting the poor are not being addressed in a strategic manner.
There is even less capacity for environmental and technical regulation, of discharge violations or failure to provide adequate infrastructure, particularly for sanitation and FSM.

- Utilisation of funds

Due to the lack of clear financial data, assessment of fund utilisation is often only available at central or central WASH level. To generalise, utilisation levels are poor, but only detailed financial assessments will enable leakage to be identified, and the most effective service provision modalities, particularly for accessible or climate resilient WASH.

However, scrutiny of national systems is likely to be challenging, since it may reveal corruption issues, but also requires finance and WASH professionals to work together. In the absence of financial data, proxy indicators may be developed to enable progress to be tracked.

121 documents1.worldbank.org/curated/en/420251468325154730/pdf/588490PUB0IBNE101public10BOX353816B.pdf

Furthermore, continuous project extensions and funding top-ups discourage financial accountability, instead exacerbating waste on ineffective interventions.

- Improve operational efficiency of WASH services

Reliable service levels strengthen willingness to pay and increases customer connections, reducing operating costs as well as increasing revenues. However, service providers require performance incentives and robust independent economic regulation. It is apparent from the FANSA country reports that professionalised service provision is a long way off.

- Tariff setting

Countries seem confused as how best to address poor service levels, some promoting both community management as well as privatisation. Community management is particularly unsuited to urban settlements where residents have no land rights, and 'communities' are less cohesive than their rural counterparts. In any case, community management is itself a service inequality, burdening the least able with time and cash contributions which are not usually expected in formal settlements.

Water supply tariff setting was only mentioned in brief by Bhutan and Maldives. Though Pakistan (Khyber Pakhtunkhwa) shared an average household monthly cost, the charge and tariff system was not explained to understand if it favours domestic and poor customers.

Tariffs and charges for other WASH services were not mentioned. Rates and mechanisms for Sri Lanka's NWSBD were located through public sources and indicated lower unit rates for poor households registered with the national social security scheme. Rates for domestic users is lower than for institutional, health and commercial sectors. However instead of increasing at high consumptions, domestic unit rates flattened off, failing to discourage excessive water use. Similarly, the water unit rates for other sectors is flat, with only the monthly charge increasing and the same system applies to sewerage rates for both domestic and commercial customers.

Rates for sewerage and SWM services for other countries was not located and how tariffs compare with water extraction rates in other sectors is not known. All countries recognise the failure to meet operational cost recovery, but no research on willingness to pay, value of water or alternative financing methods was shared. Why countries have not attempted to amend their tariff systems was not discussed.

- Regulation capacity

Service, financial and environmental regulation are all required to ensure the functionality of WASH services. Although separation of service provision and oversight is accepted as necessary for improved performance, in practice government is both the provider and regulator.

Although not explicitly mentioned, in addition to Sri Lanka's NWSDB, it is assumed that Bangladesh's WASAs and Pakistan's WSSCs must produce annual financial reports, audited by third parties.

One solution to the challenge of establishing independent environmental regulators is to outsource it to the private sector, NGOs or CBOs. However, before regulation and enforcement can take place, customers must have options to deal with their waste water or sewage. Fine can add to the sources of revenue, and be earmarked for improving services.

If private sector WASH service provision is aspired to, then a robust regulatory framework is required, which at present is lacking in most countries, as evidenced by Pakistan (Balochistan)'s Water Mafia.

4.6 Future proofing

- Population

No country report discussed population projections except Sri Lanka, nor trends in urban migration. Despite its small absolute population, it appears that Maldives considers all its settlements as urban, due to density levels, while India's report appeared to deal only with rural communities.

- Climate

FANSA Bangladesh identifies residents of hills, slums, char and haor, and salinity-prone coastal areas as vulnerable to climate change and weather events. As such, resilient designs are required for both sanitation and water. Targeting national WASH standards, i.e. water shared by 5 households with 30min collection time, and toilets shared by up to 2 households, can help to reduce funding and land requirements.

Maldives also mentions climate related risks and costs incurred shipping water between 2005 and 2015. In addition to the direct financial cost, shipping water is clearly not a sustainable solution. One notable project is the "Preparing Outer Islands for Sustainable Energy Development (POISED)" project, funded by the Green Climate Fund (GCF). This project aims to address water security issues on several outer atolls by improving the availability and quality of freshwater through rainwater harvesting and storage systems. It also includes measures to enhance climate resilience in water supply infrastructure to mitigate the impacts of extreme weather events (UNDP Maldives, 2021).

Maldives mentions the "Preparing Outer Islands for Sustainable Energy Development" project, funded by the Green Climate Fund which aims to address increase rainwater harvesting and storage capacity as well as improve climate resilience of water supply infrastructure. At present only 12,000 people on five islands are targeted and how this project can be scaled up to protect the whole population is unclear.

Although Pakistan mentions the floods of 2022, no specific resilience measures were shared, nor budget allocation to protect WASH infrastructure. Pakistan's Policy Review shared that *"comprehensive analysis reveals that exploiting all potential sites in the Quetta Valley would have only a marginal impact on alleviating the magnitude of the problem."* Even so the Ministry of Climate Change plans to increase water recharge at six Indus Basin sites by 2030, and has submitted an application to the Green Climate Fund. Although FANSA Pakistan shares that PKR 6 billion (US$ 36m) has been "earmarked from public funds to initiate activities at three designated sites while awaiting GCF assistance", progress on this initiative is not shared.

- Innovation

Both Bangladesh and Maldives mention use of solar power to increase groundwater pumping, but their motivation is unclear. Although cheap pumping may make water available to more poor communities and small holder farmers, it also reduces the value of water, particularly from non-renewable freshwater sources, which should be conserved for drinking purposes.

Bangladesh notes technical solutions for climate impacts on water and sanitation include raised platforms, and improved household management. Conversely Maldives proposed solution to high groundwater is to connect all users to piped water and sewerage.

It is unclear if Sri Lanka's NWSDB's research into use of sodium hypochlorite for drinking water disinfection was a direct result of the financial crisis, but use of locally available materials is reported to yield a saving of US$ 48k/ year.

Interestingly, use of mobile data collection and reporting systems was not mentioned, to manage climate or pollution risks.

4.7 Alternative finance sources

- Existing revenue sources

Most reports did not share details of other revenue sources beyond ODA and water supply or sewerage services. As mentioned in section 4.1, some countries receive funds from anti-terrorism and climate funds, but details of what proportion of their WASH budgets or how funds are targeted was not shared.

However, Pakistan and Sri Lanka's NWSDB infer sources from design services and equipment hire, specifically water tanker/ bowsers or vacuum tankers/ gully suckers. Whether further investigation into other sources or sharing ideas across the project countries is worthwhile is unclear, since the proportion of income from different revenue streams was not provided.

- Innovative financing

No country described in detail how climate or other non-traditional funds had been mobilised, for example to tap SDG 11 funds. Country mechanisms which cross-subsidise or redistribute funds to WASH utilities were not described. No NGO or CBO infrastructure nor WASH service provision models were shared.

4.8 Summary

It is apparent that there is a lack of attention to generating and using detailed data. This prevents development of unit costs as a basis for estimating the funds needed to meet future targets, particularly for accessible or climate resilient facilities, but also to identify the most cost-effective intervention modalities. This is crucial since

it appears that inefficient interventions are being repeated over and over despite there being no chance of achieving the SDGs if 'business as usual' continues.

Lack of data on basic water supply system metrics; no. connections, % functioning meters, NRW, bill recovery etc; suggests that although both FANSA countries and external donors accept the principles of cost recovery in theory, achieving them in practice remains beyond reach, partially due to lack of incentives while subsidies persist, but also due to inability (or perception) to pay by customers. These tensions are seen where countries both aspire to private sector models for 'efficiency and cost reduction', but also plan to provide free or heavily subsidised services. Another indicator is the repeated plan to handover O&M to communities or NGOs, despite these populations being least suited to private sector service models.

Furthermore, all countries cited technical and financial capacity issues within current government service providers, as well as compliance with current pollution regulations where they exist. Therefore, even if appropriate incentives were implemented to encourage greater private sector involvement, robust regulation is fantastical at this point – as is already demonstrated by Pakistan (Balochistan)'s Water Mafia. While such providers may appear to serve the population in the short term, the damage to the environment, threatening limited freshwater sources, is irreversible.

No country cited formative research into willingness to pay nor how to address the issue of value of water, both within the WASH sector and competing water sectors. Coordination and coherence with other water using sectors appears limited. Only a few countries mentioned the need for greater inter-agency cooperation to optimise use of funds to meet WASH targets, but also to strategize incremental development. Sri Lanka's economic crisis has led to partial and incomplete infrastructure lying idle, unable to service customers or generate revenue.

The lack of data also means that there was no real identification of unserved groups or suggested solutions to enable them to access services equitably. Even where data exists, country reports demonstrate little interest in targeting sectors who experience service inequalities. Despite mention of Leave No One Behind in a number of reports, no specific technical solutions or unit costs for targeted contexts were provided.

As in the Policy Review, Sri Lanka's NWSDB provides the only source of hope, where it appears reliable service levels has enabled tariffs to be raised in response to a national financial crisis. The situation in Bangladesh's WASAs and Pakistan's WSSCs is less clear, and less positive.

No country provided service pricing information or financing solutions for any service other than water supply, suggesting the urgency of addressing the rest of the sanitation chain is still not internalised.

The few countries which attempted to estimate the funds required to meet the SDGs did so in a very simplistic manner, applying a unit cost to the number of people yet unserved. This presumes that scaling up funding alone can achieve results, when clearly it will not, since general unit costs do not address the needs of unserved populations, raising service levels to meet the SDG standards, nor ensuring sustain future services. Furthermore, unit costs are usually only available for some types of WS and sanitation, and thus the financing gap for SWM, FSM, MHM, WTW and WWTW/ STPs remains unknown.

There was almost no mention of either technical or financial accountability mechanisms, within agencies or to customers, although Pakistan's Policy Review suggested that some WSSC's had established customer interface mechanisms. Fund absorption and utilisation are far from optimal with no real analysis of the causes of leakage.

There is no chance of meeting the SDGs if the plan is merely to increase funding to current WASH modalities. A 2016 WB report concludes, *"because of the shifts in population to urban areas and the higher unit costs in towns and cities, urban areas account for 70 percent of the capital expenditure requirements to achieve universal access to basic WASH allocations of public funds should be based not only on resource requirements, but also on the proportion of costs that can be recovered from customers, which tends to be greater in urban areas (excluding slums and poor neighbourhoods) achieving "safely managed" water and sanitation services requires additional financing on the order of* ***three times*** *current spending. This value only covers extending safely managed services to the currently unserved (in 2015). Although it will be challenging to achieve such financing volumes in many lower income countries, the significant additional health, service access time, environmental, and economic benefits that result from safe drinking water and sanitation must be taken into account requires making tough choices between achieving basic WASH for the unserved versus bringing better services to those already with basic services. National governments should provide the policy environment for equitable tariff structures that strike a balance between securing the additional financing to enable service*

extension and operations while enabling poorer populations to gain to access services. Overall costs are shown to be higher if a household, community, or service area opts to provide lower levels of service before making greater investments to reach a higher level of service. On the other hand, in the short term a lower service level may be the only option because of lack of investment financing in the short or medium term. Infrastructure development should therefore be appropriately sequenced, taking into account the public financing available[122]".

4.9 Unpacking the MaxQDA data

As noted, the reports understood the assignment quite differently and Fig 21 indicates the extent to which each country addressed various topics, both positively and negatively.

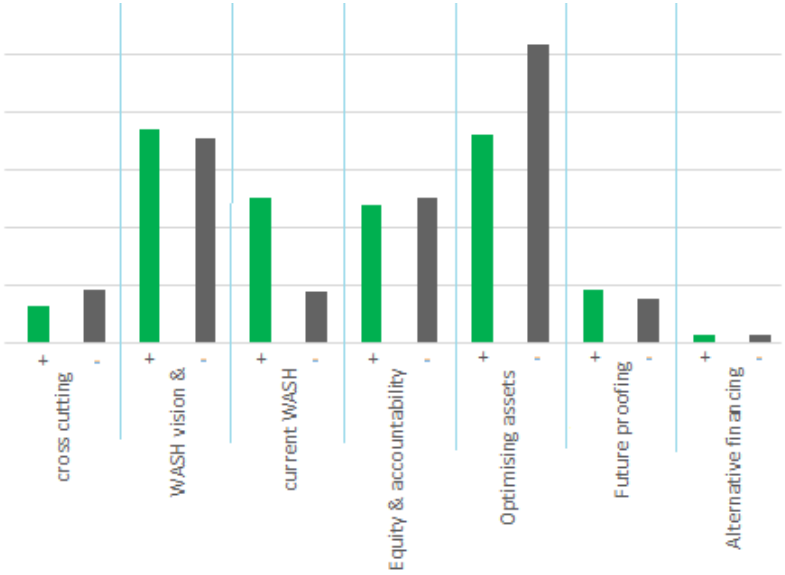


Fig 21: Relative occurrence of topics across all reports (+ve and -ve)

Of the seven themes identified, the most frequently mentioned were in relation to optimising assets, i.e. revenue, O&M etc, and we see that -ve mentions are more frequent than +ve ones. Regarding equity and accountability issues there were almost equal mentions of positive and negative issues, whereas for WASH vision and current WASH budget allocation, the positive mentions outnumbered the negative ones. However, discussion of WASH vision and current budget allocations tended to limit themselves to theoretical positions of policy documents and not discussion of actual budget commitments, which remain insufficient to meet the SDGs. The other cross cutting issues, future proofing and alternative financing were only addressed by some countries and not in great depth.

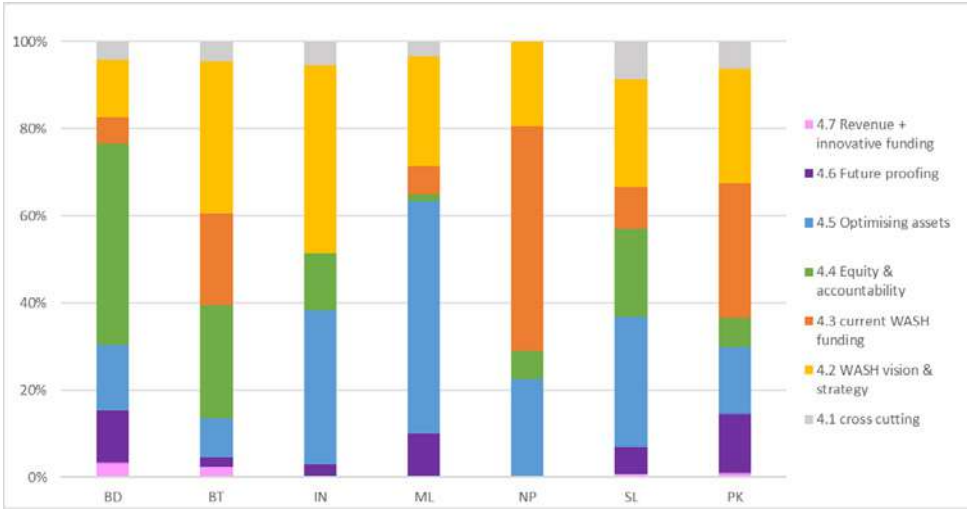


Fig 22: Report coverage of topics by country (combined +ve and -ve mentions)

122 WSP/ WB, 2016, The Costs of Meeting the 2030 Sustainable Development Goal Targets on Drinking Water, Sanitation, and Hygiene

When we look at the frequency of topic mentions by country (Fig 22), we find that Bangladesh mainly discussed issues of equity and thus is both most optimistic and most pessimistic about equity. Similarly, Bhutan mainly discussed the WASH vision and strategy and thus the bulk of both positive and negative comments are about strategy. India was most positive about its WASH strategy, but least optimistic about optimising assets. Maldives mainly discussed optimising assets, and thus is both most optimistic and most pessimistic about this issue. Nepal mostly discusses current WASH funding, and is most optimistic about this, but least positive about optimising assets. Between the two Pakistan reports, they possibly provided the most balanced discussion of all the main topics, and were most positive about current WASH funding, and least positive about WASH vision and strategy. Sri Lanka's report is also one of the more balanced, and they were both most optimistic and most pessimistic about optimising assets.

As with the Policy Review, the qualitative data analysis only provided a basis for producing this synthesis. As we have read, many of the country reports did not discuss some of the topics considered crucial to understanding the current financing situation and thus the QDA does not pick up on them.

5 References

5.1 FANSA country 2023/2024 Sector Investment Review reports

Bangladesh	"A Study on WASH Financing in Bangladesh", BIISS
Bhutan	"WASH Sector Financing Review", BTO
India	"A Study on Effective Utilization of 15th Finance Commission Tied Grants Allocated to RLBs/ PRIs for Improving Water Supply and Sanitation Services", FANSA/ MARI
Maldives	"Policy Context for Sustainable Development Goal 6 (SDG 6) in the Maldives, WASH Sector Financing Status Review Advocacy Plan", FANSA
Nepal	"Review Study on WASH Sector Financing Status in Nepal", FANSA
Pakistan	"Assessment of Balochistan Water, Sanitation, and Hygiene (WASH): Monetary Resource Allocation" "Analytical Review of WASH sector investment and financial management in Khyber Pakhtunkhwa"
Sri Lanka	"Investments for effectively achieve SDG targets for drinking water and sanitation by 2030 leaving no one behind", FANSA

5.2 Bibliography

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WaterAid, 2018, Financing universal access to sanitation and hygiene by 2030 in South Asia

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WB, 2021, Project paper on a proposed additional loan in the amount of US$ 40 million and a proposed restructuring to the Democratic Socialist Republic of Sri Lanka for the Water Supply and Sanitation Improvement Project (accessed at documents1.worldbank.org/curated/en/639141623636160347/pdf/Sri-Lanka-Water-Supply-and-Sanitation-Improvement-Project-Additional-Financing-and-Restructuring-Project-Paper.pdf)

6 Annex

6.1 Country recommendations

6.1.1 Bangladesh

Ensuring safely managed water is a major concern in the context of achieving SDG 6.1 within the stipulated timeline. People living in hard to reach areas, hills, slums, char and haor, and salinity-prone coastal areas find it difficult to access safe water. In addressing this problem, fixed safe water points need to be established to cover slums and floating populations. For example, the safe water points installed in chars of Gaibandha becomes unusable during regular floods and rainfall as many of them are not installed at adequate elevation. Some of the points are also damaged during floods, which increases difficulty for char households to collect safe water. Therefore, water points need to be established in elevated platforms in chars and slum areas subject to inundation during floods and rainfall. Moreover, since households are usually located sparsely in chars, adequate number of water points need to be established to enable them collect water within 30 minutes. In addition, solar-powered water pumps can be installed in chars for supplying piped water at fixed points, which can be used for both drinking and irrigation. Village groups can be established for operation & maintenance in which the recurrent costs can be covered through user fees.

Safely managed sanitation is a major challenge in char areas as majority of the households live under poverty. Therefore, they should receive priority in transferring sanitation technology. Faecal sludge and waste water management would not be possible by LGIs and private sector. Therefore, NGOs that work in chars can provide training to the households on the management aspects. They can also install plants in chars to for producing compost, which can be used in soil conditioning in char areas.

Installing adequate number of public toilets to cover floating population at both cities and rural areas (e.g., upazila and union parishad headquarters, marketplace and transport stations) is important to provide access of safely managed sanitation service to floating population. The LGIs need to install the facilities while local NGOs can take responsibility of their operation & maintenance as well as faecal sludge and waste water management.

It is difficult to provide safe water and sanitation services in hill areas, especially in the CHT. Households are located very sparsely in difficult terrain where transport and living are challenging, especially for the households that live in remote places of the hills. As mentioned in the 8FYP, they are dependent heavily on unprotected surface water sources, such as springs and streams, for drinking and other activities including sanitation and hygiene. They need to be supported with rainwater harvesting and water treatment technologies. In addition, support should be provided for installing safe sanitation and orientation for faecal sludge management.

Project for Safe Water Supply throughout the Country is a large project to supply safe water in rural areas. A similar water supply project is required in urban areas considering the fact that a large number of people are deprived of safely managed water in big cities and municipal areas, a significant portion of whom belong to low-income households. Many municipalities are unable to cover all population living in the municipal areas because of the capacity of the water pumps and lack of treatment technology to use surface water. Therefore, a comprehensive urban water supply mapping is required to trace deprivation in accessing safe water and ensure public finance accordingly.

Private sector has been identified as a potential actor in the provision of safely managed sanitation in the national plan documents. However, it has not yet emerged as a viable actor because of lack of sufficient incentive (user

fee) and willingness to pay. Also, engaging private sector in basic utilities like water supply and sanitation is also politically sensitive especially in the urban areas as LGIs are predominant providers. However, a large number of the municipalities have turned out to be capacity-deficient in providing sanitation and faecal sludge management services as population of urban areas has increased significantly. Therefore, public-private and public-NGO partnership can play supplementary role in enhancing capacity of the municipalities in this regard.

NGOs can play significant role in both safe water supply and sanitation in both urban and rural areas. They can work at urban slums, rural, remote and coastal areas through installing shallow and deep tube wells, and faecal sludge and waste water treatment plants as developing cases individually and in partnership with LGIs. They can play important role in monitoring and oversight of WASH budget at local and national levels, and promote civil engagement with the LGIs. They also can undertake sensitisation programmes on safely managed water and sanitation at community level.

Finally, the development partners can enhance partnership and support to achieve the SDG 6 within the stipulated timeline. They can support new ventures by social enterprises and NGOs along with the government especially in enhancing capacity of LGIs in both cities and rural areas, and climate hotspots including safe water supply in salinity prone coastal areas through financial support, technical assistance, and technology transfer.

6.1.2 Bhutan

Securing sufficient funding WASH is of utmost significance for improving public health and overall quality of life in Bhutan. In this regard, the Bhutan Toilet Organisation, operating as a Civil Society Organisation, has taken the initiative to conduct a comprehensive assessment of the current state of WASH financing in Bhutan, identify its challenges, and offer recommendations to advocate for the fair and sustainable delivery of WASH services. Based on the findings and analysis of the review study, the following recommendations are seen critical relating to WASH financing in Bhutan:

- It has been observed that a significant portion of the government-installed past WASH facilities have encountered challenges. The possible reasons for such glitches could be due to poor planning and low-quality designs of the infrastructures and the materials used, as well as insufficient oversight during construction and installation. Additionally, inadequate maintenance by the beneficiaries could have contributed to these challenges. Given this challenge, it is crucial to establish effective systems and provide capacity-building support to planners, designers, field implementers, and those involved in monitoring and evaluation. Allocating resources for this purpose is an indispensable element of improvement.
- Typically, the sustainability of projects in Bhutan is short lived. This issue can be attributed partly to the limited involvement of rural communities in the planning and decision-making processes of WASH projects. Furthermore, there are often doubts about the local community's capacity to operate and manage the completed projects. To ensure the enduring success of these projects, it is essential to strengthen the capabilities of local communities so they can assume complete ownership of the initiatives. Resources must be allocated to support community-led initiatives that empower local communities to oversee and sustain their WASH infrastructure. Further, any new project should ensure allocating dedicated resources for post-project management.
- Considering Bhutan's susceptibility to climate change, promote the implementation of WASH projects designed to withstand climate-related challenges. This could entail constructing infrastructure capable of enduring severe weather events or establishing a sustainable water supply system resilient to shifting weather patterns.
- Raise public awareness about the importance of WASH and the need for adequate financing. Engage the public in advocacy campaigns that inform them about their rights to clean water and sanitation and at the same time the responsibility and accountability that they should bear.
- The quality of drinking water in urban areas, specifically in municipalities, is largely maintained through effective and timely treatment and organized distribution systems. Conversely, in rural regions, people primarily rely on natural sources like springs, ponds, streams, and wetlands for their drinking water, without any responsible authority overseeing its quality. It is crucial to address these deficiencies through interventions to align with the Sustainable Development Goals (SDG) and ensure access to safe drinking water for all.
- The per capita government investment on water supply and sanitation in Thromde is approximately Nu 4,500 annually. However, the average revenue generated from the Water and Sewerage Charges is approximately Nu 1500 annually which is twice lower than investment. Therefore, it is highly recommended to pilot and operate water supply in Thromde under PPP modalities and replicate if successful.
- To strengthen WASH financing in Bhutan, the following are recommended:
    - Seek innovative financing mechanisms, such as public-private partnerships in Thromdes and community-based contributions in rural areas, to supplement traditional sources.
    - Enhance the capacity of local authorities and communities to plan, implement, and manage WASH projects effectively.

- Ensure that funding allocation prioritizes underserved rural and remote areas, where WASH access is often the scarcest.
- Improve data collection and monitoring systems to assess the impact of WASH investments and make informed decisions.

6.1.3 India

As noted, India's report refers to a rural context and their list of recommendations was extensive. Only those related to finance are reproduced here.

- Training is essential for PRIs/GP functionaries and sub-committees to enhance their capabilities in developing comprehensive plan documents encompassing all twenty-nine (29) subjects. The integration of water and sanitation services within local governance plans is important for uploading on the eGramSwaraj Portal of the Government of India. This step serves as a prerequisite for the release of 15th Finance Commission grants and other support under various government schemes.
- The nodal agency of the DDWS should proactively intimate each PRI/GP about the year- wise allocation, release, and utilisation status of both the 15th FC tied and untied grants. It is crucial for the DDWS to facilitate grant management, ensuring optimal and effective utilisation by PRIs/GPs. Implementing a robust tracking, review, and monitoring system is essential to assist these institutions in fully harnessing the awarded grants.
- Providing training to GP functionaries is essential, focusing on financial compliances aligned with the requirements of government schemes and departments. This training aims to enhance their capacity to optimally utilize allocated resources for diverse development activities.
- The VWSC/ Pani Samiti or sub-committee of the GP plays an important role, and it is imperative to provide adequate training in their roles and responsibilities. This training is designed to enhance their relevance in serving the local communities effectively. Involving these local institutions in the development of GP plan documents, including VAP, AAP, and GPDP, is essential, as these documents are prerequisites for the release of 15th FC grants to PRI/GPs. The GP plans must comprehensively cover all 29 subjects, with a special emphasis on water and sanitation, as it is directly linked to the 15th FC tied grants.
- The active involvement and consultation of VWSCs in the planning and utilisation of 15th FC grants by GP functionaries, particularly the Sarpanch and Secretary of the PRIs/GP. Neglecting this collaboration may relegate the VWSC's role to a nominal or symbolic status. Gram Panchayat functionaries should allocate sufficient space and opportunities for this sub-committee to actively contribute to the planning and decision-making processes, specifically concerning the enhancement of water and sanitation services in the communities.
- In certain areas, water and sanitation structures are not operating at their full capacity, with issues such as damage or partial functionality observed in community toilets, compost pits, and water supply stand posts. These facilities, managed by the community for public services, are found to be poorly maintained. Hence, it is to prioritize the allocation of 15th Finance Commission grants towards retrofitting, addressing equipment issues, and providing necessary accessories, supplies, and other support services. This targeted spending aims to ensure that these systems are optimally functional and sustainable.
- Out of the allotted 1,42,084 Crore, only 38,724 Crore has been released, and 30,529 Crore has been utilized as of September 30, 2023, marking the effective utilisation of funds over 2 ½ years within the five5-year grant period. This represents a release rate of 27%, falling short of the expected 50%. Moreover, of the funds released, only 79% has been effectively spent. To address this, measures need to be implemented to expedite both releases and spending of tied grants to Panchayati Raj Institutions/Gram Panchayats across states. This can be achieved through the collaborative efforts of the Nodal Agency DDWS, State Finance Commission, Ministry of Panchayati Raj and Rural Development (MoPR&RD), Ministry of Jal Sakthi, and other relevant stakeholder agencies. Regular discussions and consultations with PRIs/GP elected representatives, VWSC/Pani Samitis, or sub-committees, and CSOs is important for effective coordination and implementation.
- Gram Panchayat functionaries exhibit a commendable level of awareness regarding the 15th FC grants and their alignment with national priorities, particularly in the domain of water and sanitation services at the PRI/GP level. The grants, received through the PFMS account, have been allocated and expended for water and sanitation activities. However, despite the existing awareness, the optimal utilisation of grant funds within the stipulated time has not been achieved. To address this gap, there is a need to provide training to Gram Panchayat functionaries on the modalities and effective management of these funds.
- The number of PRI/GPs receiving funds has shown a declining trend in subsequent years. The grants are released in two instalments per year, at the beginning of each half-year. This decline is likely attributed to delays or non-submission of grant utilisation certificates and audit reports by the PRI/GPs on the eGramSwaraj portal. The DDWS Nodal Agency facilitates the timely submission of audit reports and grant utilisation certificates by PRIs/GPs in accordance with the norms. This compliance is necessary for the release of grants from the Ministry of Finance (Department of Expenditure), with recommendations submitted through the 'Grants Transfer Certificate.'
- The utilisation of grants has exhibited a declining trend in the years following their release. This underlines the imperative to enhance reporting, accounting, utilisation, and compliance systems at the PRI/GP levels.

- The allocation of 15th FC grants is focused on enhancing household sanitation through the retrofitting of non-functional toilets and ensuring adequate water supply. This strategic utilisation aims to sustain ODF status and prevent communities from reverting to open defecation practices.
- Menstrual hygiene is part of the sanitation system, contributing to enhanced personal hygiene practices among adolescent girls. The 15th FC grants can be directed towards improving menstrual hygiene practices within the communities. Elevating awareness levels within the community is essential to enhance the status and performance of menstrual hygiene management.
- To encourage community engagement, the periodic consultations of Grama Sabhas for discussion of VAP, AAP, and GPDPs, along with the approval of financial Audit Reports, should be actively promoted according to the established schedule. It is essential for grama sabhas to deliberate, resolve, and endorse the utilisation of 15th FC grants by the respective PRIs/GPs.
- Deliberation and decision-making are necessary to determine whether the 15th FC tied grant can be transferred to the VWSC/Pani Samiti after being received by the PRI/GP. Currently, the grant is utilized by the PRI/GP without involving the VWSC/GP sub- committee. The VWSC was established for planning, implementing, and monitoring water and sanitation services within the community, functioning as an empowered committee with an authorized bank account. If the VWSC's role is not actively incorporated, its purpose may be limited to collecting user charges and community contributions. Hence, a policy decision is needed to empower the VWSC/Pani Samiti to manage the 15th Finance Commission tied grants designated for water and sanitation initiatives.
- Capacity-building training is essential for members of the VWSC/Pani Samiti, GP functionaries such as Sarpanch and Secretary, Ward Members, SHG women, School Management Committees (SMCs), Mothers Committees, CBOs, and Health and Sanitation workers. Additionally, training should extend to RWSS/ PHED officers. The focus of the training should be on effectively utilising the 15th Finance Commission tied grants to enhance water and sanitation services within the Panchayati Raj Institutions/Gram Panchayats.
- It is imperative to give priority to the utilisation of 15th Finance Commission tied grants for the construction of efficient drainage systems in streets, facilitating the discharge, collection, and treatment of greywater. This prioritisation is essential as certain crucial water and sanitation projects are not adequately addressed under existing schemes.
- The utilisation of 15th Finance Commission tied grants should be prioritized to address marginalized, vulnerable, and resource-poor communities and groups, adopting a LNOB approach.
- The Gram Panchayat (GP) office should prominently display a comprehensive work plan outlining the detailed utilisation of 15th Finance Commission tied grants.
- Emphasis should be placed on technological innovations and their adoption to enhance access to improved water and sanitation services. The 15th FC tied grants should be permitted for use in innovative technologies that can address efficiency gaps in the supply systems.
- Meetings should be organized with stakeholders at GP, Block, District, State levels to build awareness on the allocations and utilisation of the 15th FC tied grants to PRI/RLBs involving Elected Representatives, DDWS, JJM, SBM, MoPR&RD, RWSS, PHED, CSOs, ISAs, CSR and other stakeholders.
- Conducting meetings at various levels, including Gram Panchayat (GP), Block, District, and State, is essential to raise awareness about the allocations and utilisation of the 15th Finance Commission tied grants to Panchayati Raj Institutions/Rural Local Bodies (PRI/RLBs). These meetings should involve elected representatives, officials from the DDWS, JJM, SBM, Ministry of Panchayati Raj and Rural Development (MoPR&RD), RWSS, Public Health Engineering Department (PHED), CSOs, ISAs, CSR, and other relevant stakeholders.
- The DDWS and the Ministry of Jal Shakti should prioritize specific works and activities to be undertaken with the 15th FC tied grants, streamlining the recommendations instead of the current exhaustive indicative list of activities.

6.1.4 Maldives

The Maldives faces complex challenges in providing water and sanitation services due to its unique geography and climate vulnerabilities. Tracking financing for the Water, Sanitation, and Hygiene (WASH) sector is crucial for achieving Sustainable Development Goal 6 (SDG 6) by 2030. The literature review indicates the global and national need for substantial financing, and the Water and Sanitation Master Plan outlines significant financial requirements. Budget allocation and expenditure efforts demonstrate government commitment, yet concerns about potential shortfalls persist. Completed projects showcase substantial investments, but financial challenges persist, necessitating sustained and diversified funding sources. Positive progress is evident in the SDG 6 Data Portal, but ongoing financial, institutional, and participatory challenges highlight the need for effective planning and international cooperation. Overall, achieving SDG 6 in the Maldives requires continued attention to financial sustainability, evolving definitions of WASH, and a commitment to overcoming persistent challenges for a sustainable water and sanitation future. It is important to initiate government led multi stakeholder networking, scheduled interactions through WASH platforms in order to increase community engagement and collaboration inorde to exhilarate action towards achieving SDG6 by 2020.

6.1.5 Nepal

National Natural Resource and Fiscal Commission to increase weightage of water and sanitation to the Formula Based Fiscal equalisation Grant, so that local governments can put increased demand while budgeting WASH

- Pokhara and Hetauda municipalities need to develop costed WASH plans to determine financing gap in the municipalities
- WASH sector ministries and local governments to prepare financing strategies for increasing budget in the sector
- WASH sector ministries and local governments to prepare clear strategy for an efficient and effective mobilisation of 4T (Tax, Tariff, Transfer and Trade) as part of strengthening financing system
- WASH sector ministries and local governments to identify causes and prepare clear strategy for improving absorption capacity of the sector
- More studies on compliance of financing policies while budgeting WASH at the local level
- Studies on how directly benefited gender accountable budgets are contributing to fulfil gaps and disparities in decision making and access to WASH

6.1.6 Pakistan

- GoKP establish a financial discipline within three institutions.
- Either GoKP set performance targets (in collaboration with three institutions) or approve these (prepared by the three institutions). The target could be on billing efficiency, collection efficiency and on working ratio.
- GoKP carry out performance audit of three institutions to establish financial check & balance.
- The PHED & LGE&RDD to develop long and medium-term WASH plans with clear financial needs.
- The Finance Department by using WASH Sector plans, develop a financing strategy and allocate resources for the sector.
- PHED and LGE&RDD (TMAs) to have a sound financial management practice at least producing comprehensive annual report on allocation, expenditures, revenue and financial gap.
- Instead of ad-hoc fund transfer mechanism government to establish a lifeline + performance driven fund transfer mechanism.
- Capacity building of all three institutions in financial management
- Sanitation and hygiene to reflected as separate heads in the ADPs.
- The Finance Department to create codes allowing bifurcated allocations and utilisation and analysis within its financial system.
- The three institutions establish their WASH management Information System – MIS use this (MIS) to plan, monitor, evaluate and take financial (and administrative) decisions based on MIS data.

6.2 Qualitative Data Analysis codes and keywords

Qualitative Data Analysis is an iterative approach (Fig 23), where the PESTLE groups provide the themes within which codes are assigned.

The themes, codes and keywords applied for this analysis are given in Table 21.

Fig 23: Cycle of thematic analytic (adapted from Braun & Clarke)[123]

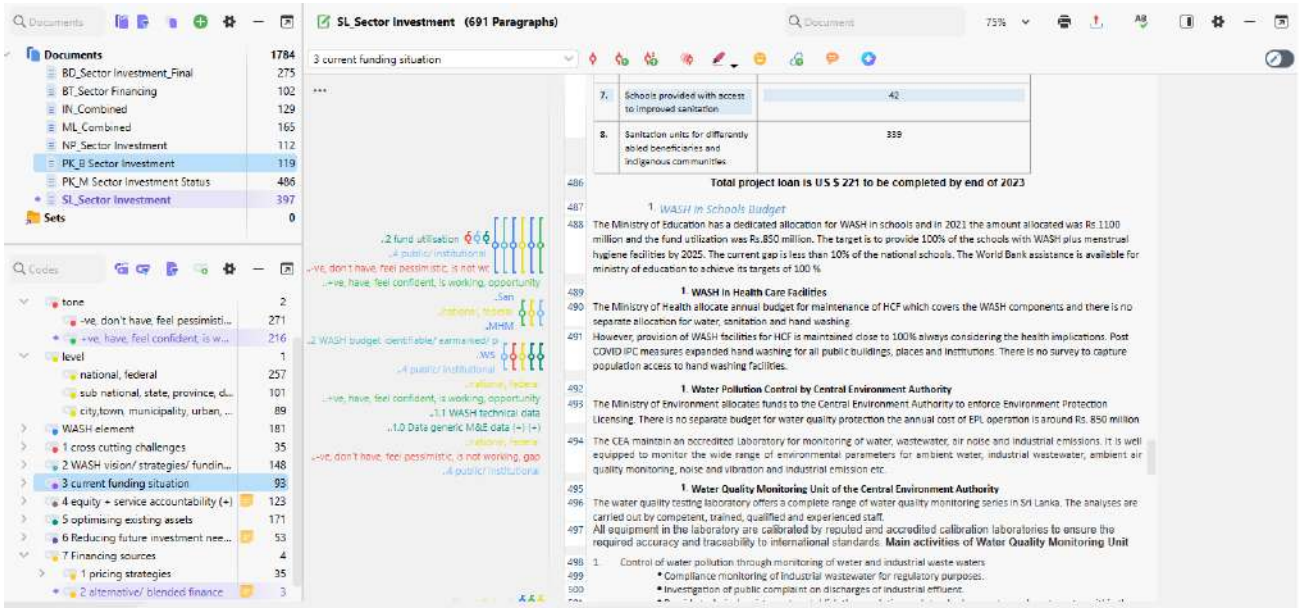
123 Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101; Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper (Ed.), APA handbook of research methods in psychology Vol 2: Research designs (Vol. 2, pp. 57–71). American Psychological Association

Table 21: Themes, codes and keywords

Theme	code	Associated keywords
tone	-ve,	don't have, feel pessimistic, is not working, gap
	+ve,	have, feel confident, is working, opportunity
level		national, federal
		sub national, state, province, district
		city, town, municipality, urban, per-urban
WASH element		WS, San, SW/ drainage, SWM, FSM, WTW, WWTW/ STP/ DEWATS, landfill/ incineration, hygiene/ HWS, MHM, WQ, contamination, pollution
		Design, construction, tech advice, info, plant, equipment hire
1 Cross cutting challenges		
	1 national security / terrorism/ instability	
	2 Sector capacity	HR evaluations conducted, resource waste/ properly used/ reviewed, skilled/ trained HR available, civil servant cyclical transfer, regular review of budget/ HR sufficiency
	3 political interferences, corruption	
	4 coordination	Duplication/ synergy
2 WASH vision/ strategies/ funding priorities		
	1 national/ cross party priority/ health	
	2 WASH budget identifiable/ earmarked/ published	
	3 sanitations, FSM prioritised over WS	
	4 public/ institutional	
	5 O&M. upgrade/ refurbishment	
	6 manage water comp/ extraction fees/ value of water	
3 Current funding situations		
	1 multilateral/ UN/ dev+ commercial banks	Bilateral, donations, CSR, grants, loans, mixed, TA, cap bldg., anti-poverty, anti-terror
	2.1 taxes	
	2.2 private: corporations/ PPP/ BOOT/ BOT/ contract/ auction	subsidy, tax incentives for WASH service provision, financial autonomy, enabling legal environment for WASH service provision, worker insurance, OHS, PPE, health surveillance, regulation, oversight, supervision, enforcement, INGO, foundations, philanthropy (+)

Theme	code	Associated keywords
4 Equity + accountability		
	0 service inequalities	below 'basic' service level; shared, intermittent supply, unsafe etc, domestic users pay more than other sectors, piped WS, sewerage not available- tech or financially, informal/ poor pay more for same service, informal/ poor receive lower services levels, informal/ poor expected to do own O&M, gender inequalities - fewer/no women/ girls toilets, no MHM, inaccessible WASH, WASH financing options available
	1 women/ children/ girls	
	2 community led/ participation/ consultation	
	3 KPI/ performance review/ incentives/ competitions	
5 Optimising existing assets		
	1.0 Data generic M&E data	
	1.1 WASH technical data	
	1.2 WASH financial M&E, bill collection, illegal connections	
	2 fund utilisations	
	3 operational efficiencies	
	3.1 maximise connections to central systems	
	4 regulation/ enforcement as funding source	socio/ env assessments, design checks etc, licences, permits issued, compliance/ inspection/ verification/ licence renewal undertaken, pollution, discharge
6 Future proofing - Reducing future investment needs		
	1 climate/ population	
	3 connected with research/ training institutions	
7 Financing sources		
	1 pricing strategies	service tariffs/ fees, design services, volumetric, metered, labour/ cash contribution, cross/ subsidies, social security, free
	2 alternative/ blended finance	

Below is an example of a coded section of a report using MaxQDA:



Each code was then combined with the +ve and -ve "tones";. "+ve" x "climate", "+ve" x "pricing strategies" etc MaxQDA was then used to report the frequency of each combination under each of the themes. These frequencies, converted to % (where 100% is total frequency of combined codes for each country), were then compared for each country.

6.2.1 Limitations

By default, the nature of these reports aims to highlight gaps and therefore negative aspects of the current situation are usually mentioned more than the positive. However, the financial reports often reported on the theoretical situation based on policy documents, but were lacking in actual technical and financial data, which gives an unrealistic positive picture of the current situation.

The reports have different styles; some repeat the same content numerous times; in discussions, recommendations lists and conclusions. Therefore, the absolute number of occurrences is not an accurate reflection of the scenario. Hence these were converted to % for each country, which aims to reduce the impact of style differences between country reports.

These % were then used to identify themes and codes of significance, and thereafter conventional synthesis, by reading and ingesting the contents of every report, was undertaken.

6.2.2 Coding analysis results

Based on the above process, the % frequencies are given below on Table 22 for each of the main headings/ topics.

	4.1 cross cutting challenges		4.2 WASH vision & strategies		4.3 current WASH funding situation		4.4 Equity & accountability		4.5 Optimising assets		4.6 Future proofing		4.7 Alternative financing sources	
	+	-	+	-	+	-	+	-	+	-	+	-	+	-
BD	4%	6%	13%	13%	6%	7%	**46%**	**37%**	15%	18%	12%	16%	3%	1%
BT	5%	9%	**35%**	**36%**	21%	9%	26%	18%	9%	18%	2%	5%	2%	5%
IN	6%	5%	**43%**	21%	0%	0%	13%	26%	35%	**47%**	3%	0%	0%	0%
ML	3%	4%	25%	18%	7%	4%	2%	0%	**53%**	**68%**	10%	7%	0%	0%
NP	0%	0%	19%	39%	**52%**	3%	6%	13%	23%	**45%**	0%	0%	0%	0%
PK	6%	7%	26%	**33%**	**31%**	11%	7%	14%	15%	26%	13%	7%	1%	2%
SL	9%	15%	25%	18%	9%	10%	20%	18%	**30%**	**37%**	6%	3%	1%	0%

Table 22: Report coverage of topics by country disaggregated for(+ve and -ve mentions)

For Further Details, Contact

Freshwater Action Network South Asia

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