Freshwater Action Network South Asia

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

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Acronyms

ADB	Asian Development Bank
ATM	Automated Teller Machine
BCC	Behaviour Change Communication
CBO/ CSO	Community Based Organisation/ Civil Society Organisation
CWIS	City Wide Inclusive Sanitation
DEWATS	Decentralised Wastewater Treatment Systems
DHS	Demographic and Health Surveys
FANSA	Freshwater Action Network -South Asia
FGD	Focal Group Discussion
FSM	Faecal/ Fecal Sludge Management
GIS	Geographic Information Systems
HCFs	Health Care Facilities
HR	Human Resources
IWRM	Integrated water Resource Management
JMP	Joint Monitoring Programme
KPI	Key Performance Indicator
LDC	Least Developed Country
MHM	Menstrual Hygiene Management
MICS	Multiple Indicator Cluster Surveys
MIS	Management Information System
MDGs	Millenium Development Goals
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organisation
NWSDB	National Water Supply and Drainage Board
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)
OHS	Occupational Health and Safety
PESTLE	Political, Economic, Social, Technological, Legal and Environmental
QDA	Qualitative Data Analysis
SAARC	South Asian Association for Regional Cooperation
SDGs	Sustainable Development Goals
SIDS	Small Island Developing State
SMART	Specific, Measurable, Assignable, Realistic, Time-related
SMSS	Safely Managed Sanitation Systems
STP	Sewage Treatment Plant
SWM	Solid Waste Management
WASH	Water, Sanitation and Hygiene
WS	Water Supply
WUE	Water Use Efficiency
WTW	Water Treatment Plant
WWTW	Waste Water Treatment Plant

Acknowledgement

Preparation of a synthesized report on the sector policy review in FANSA operating countries in South Asia entails documenting the current status and gaps regarding the policy provisions in the WASH sector that facilitates and guides the sector 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 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 Bill & Melinda Gates Foundation and the Sanitation Water for All (SWA). 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 towards advocating for proper policy execution to facilitate the equitable, and inclusive 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 commitments and dedications 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 across 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. Seven South Asian countries, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka, where FANSA is operating through its National Chapters has undertaken policies review on sanitation and investments in the WASH sector in the pursuit of achieving the country's commitments towards SDG 6.1 and 6.2.

This is the synthesis report commissioned by FANSA, of Policy 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). 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:

Rising for Rights – Outcomes

Advocacy efforts by FANSA contribute to Policy action **based on current evidence** by at least six number of intervention countries ensuring **WASH rights of the poor, vulnerable, and marginalized** communities are achieved through CWIS.

Strengthened accountability mechanism through enhanced **capacity of CSOs and marginalized groups** to lead and collaborate with stakeholders for sector monitoring at local or sub-national governments for service level improvement and reliability.

Strengthen FANSA as a vibrant regional and national advocacy institution, a voice for right holders with enhanced capacity to advocate for safely managed, equitable and inclusive WASH services by empowering the networks among CBOs/CSOs including community groups who advocate for sustainable WASH policies and practices in South Asia region.

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 Secretariate, currently operating in Nepal.

This report provides a comprehensive regional overview of the WASH sector policy reviews, aiming to benefit a wider audience within the sector.

1.1 Objective

The objective of the WASH sector Policy Reviews across the FANSA national chapters in South Asia was "to enhance equity and inclusivity in water, sanitation, and hygiene (WASH) services by evaluating existing policies and identifying areas for improvement, particularly in Safely Managed Sanitation Services (SMSS) and CWIS."

Besides, this review study also aimed at identifying the prevailing gaps in the sector policies to complement the strengthening of the policy provisions in achieving the SDG commitments in one hand also to pave the way for achieving what the commitments were made by the respective countries by 2030.

- **SMSS**: an improved sanitation facility that is not shared with other households and where excreta are safely disposed of in situ or treated off site.
  Improved sanitation facilities include flush/pour flush to piped sewer systems, septic tanks or pit toilets; pit toilets with slabs (including ventilated pit toilets), and composting toilets.[1]

- **CWIS:** Business as usual in urban sanitation—where conventional sewerage and wastewater treatment are considered as the only solution—will not get us to universal safely managed sanitation. Citywide Inclusive Sanitation (CWIS) looks to shift the urban sanitation paradigm, aiming to ensure everyone has access to safely managed sanitation by promoting a range of solutions—both onsite and sewered, centralized or decentralized—tailored to the realities of the world's burgeoning cities. CWIS means focusing on service provision and its enabling environment, rather than on building infrastructure.[3]

Fig 1: Key Principles to Deliver CWIS[2]

1.2 Considerations

While undertaking a review of policies in the Water, Sanitation, and Hygiene (WASH) sector, it is essential to assess, review and evaluate various aspects related to the sector's functioning and impact through effective and sustainable implementation in a comprehensive manner thereby leading to informed decision-making, policy improvements, and better outcomes in water, sanitation, and hygiene services.

Similarly, while analyzing the collected information during the policy review assessment exercise, the review, analysis and interpretation of the existing policy provisions and regulatory frameworks were done considering the different lenses and aspects of outcome (equity, safety, and sustainability) and function (responsibility, accountability, and resource planning and management) components for promoting safely managed services.

Therefore, the policy review study assessment covers the following key areas, but not limited to:
- Policy objectives and regulatory framework from the perspectives of coherence, coordination,
- Policy execution with financing, coverage, equity, inclusion, and sustainability
- Implementation challenges and lessons learned with Recommendations for policy enhancement.

The synthesis report,
- Focuses on the consolidation of the seven reports from each country on WASH policy(s) reviews.
- Focuses on municipal/urban Water Sanitation and Hygiene (WASH) policies and situations as reported in the studies by the FANSA national chapters, rather than national/ rural issues.
- 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 policy actions in the WASH sector.

1 https://www.who.int/data/gho/indicator-metadata-registry/imr-details/4820
2 https://citywideinclusivesanitation.com/key-principles-to-deliver-citywide-inclusive-sanitation/
3 https://www.worldbank.org/en/topic/sanitation/brief/citywide-inclusive-sanitation

- India is a mentor country, as such the Policy Review report did not provide specifics for the individual municipalities/ urban areas in which the project operates. Location specific recommendations were not available for this synthesis report.

1.3 Qualitative Data Analysis (QDA) methodology and report structure

The analysis used a combination of methods applying a Political, Economic, Sociological, Technological, Legal and Environmental (PESTLE) analysis structure. In addition to conventional synthesis, the QDAMiner software was used to code report content for qualitative data analysis. Some of the relevant keywords for each theme are noted next to the PESTLE subheadings of this report. The QDAMiner findings[4] directed the conventional synthesis, ensuring any significant issues were not omitted.

PESTLE for WASH has an element of overlap,[5] so while readers may not always agree with the headings under which issues have been assigned, they should find that the critical issues are covered under a different subheading of this report.

Acknowledging the diversity of the country project areas the report begins by presenting an overview to enable readers to better understand the context. In some cases, there may be more similarities and opportunities for learning from countries in another region, than with one of the other Rising for Rights project countries.

4 Refer Annex 7.2 for explanation of QDA software, coding structure and findings
5 https://washresources.cawst.org/en/resources/03aa09e8/pestle-context-assessment-guide

2 FANSA project country overview

While Nepal and Bangladesh are considered LDCs, Maldives graduated from the list in January 2011 and Bhutan in December 2023. The Maldives is also classed as a Small Island Developing State (SIDS).

Table 1 below demonstrates the sheer diversity of the FANSA project areas (max and min values given in bold), the total urban populations vary from 0.001m on Dhifushi Island (Maldives) to 1.001m in Quetta (Pakistan). However small absolute population does not also mean small population density with Male having highest density at 23,000/ km^{2}[6] despite its total population of ~0.212m, while Hetauda (Nepal) has the lowest density at ~ 800/km^{2}.

We also see the range of country GDP/ capita, US$10,366 for Maldives to US$1,159 for Nepal, an indicator which is correlated to Water Use Efficiency (WUE).[7] Further data is presented from the 2023 Global Water Security Assessment in relation to water security, access to safe sanitation, WASH attributed mortality, wastewater treatment status, critical levels of water stress, water use efficiency, human safety from water disasters, impact of severe 100-year floods. Finally, the table presents some annual climate data for understanding of the current context.

Table 2 presents the latest online national urban data for each country for general comparison of household, school, and health care facility (HCF) status according to the 2022/2023 JMP.[8]

- **Household**
  - Safely managed household water supply coverage ranges from 23% for Nepal to 99% in the Maldives.
  - Safely managed household sanitation ranges from 29% in Bangladesh to 100% in the Maldives.
  - Household sewerage ranges from 7.1% in Sri Lanka to 63.3% in Pakistan.
    - Household septic tanks[9] account for 12.4% in India to 55% in Nepal.
    - 87.6% of urban Indian households have other sanitation solutions, while 4.2% of urban residents in Nepal still practice open defecation.
  - 97.1% of Maldives households meet the basic handwashing service level, compared to 67.5% in Bangladesh.
    - 97.1% of urban households have a private place to wash and change during menstruation, and 99.3% of urban Indian households report using sanitary pads, disposable or reusable.
- **Schools**

Most countries either lack school data or rural: urban disaggregation.

  - Maldives reports 100% of urban schools meet the basic water supply service level and 96% for basic sanitation.
  - Pakistan reports 16% of urban schools have no service.
  - Only Bangladesh had hygiene data for urban schools.
- **Healthcare facilities**

Again half the countries either lack HCF data or rural: urban disaggregation.

  - Sri Lanka reports 100% basic water supply service, while 7% of Nepali HCFs report no service.
  - However, Sri Lanka reports 8% have no sanitation facilities, while 28% of HCFs in Bangladesh have basic service.
  - Only Bangladesh and Maldives have disaggregated hygiene/ handwashing data for HCFs.
  - Sri Lanka reports 47% basic solid waste management (SWM) services at HCFs, while 22% in Maldives have no service.
  - Only Maldives has disaggregated data on HCF environmental cleanliness.

Fig 2 then presents maps of national water security, drinking water access, sanitation access and water governance.

6 JMP 2023 only provides 'rural' data
7 2023 Global Water Security Assessment, p55
8 https://washdata.org/data/downloads
9 This assumes that respondents correctly identify having a septic tank that provides partial treatment, rather than a pit which provides no treatment.

Table 1: FANSA country/ project areas snapshot

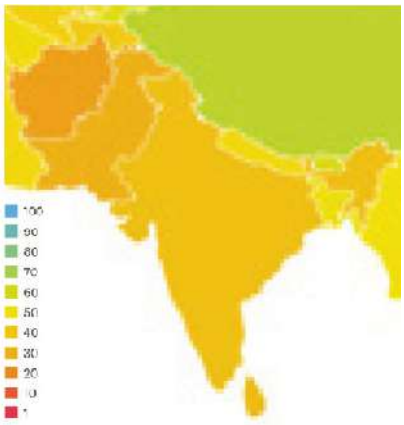
Country: Project areas	Urban population† (density 1000/km2) †indicative figures from various sources and years	2021 GDP per capita (ranking)	2023 UN Global Water Security Assessment								Annual Climate info[10]					
											Temp ◦C		Monthly rain mm		Humidity %	
			Country score on critical levels of water security.[11]	Country scoring low in access to safe sanitation	WASH attributed mortality (per 100,000 population)	wastewater treatment status (1= <10% 2=10-20%)	23 countries with critical level of water stress in 2019	20 lowest-scoring countries for water use efficiency in 2019	20 countries with lowest levels of human safety from water disasters (2016-2020)	20 countries most severely affected by severe 100-year floods	min	max	min	max	min	max
Bangladesh: Barishal, Gaibandha, Moulvibazar	Nat: 67.980m Ba: 0.419m **(7.3)** Ga: 0.059m (1.8) Mo: 0.041m (4.0)	$2,450 (139)	(51)		18.2	2				**~60%** loss GDP	12	33	4	329	1	100
Bhutan: Thimpu	Nat: 0.341 Th: 0.152m (4.4)	$3,063 (130)			15.7					**~21%** loss GDP	4[12]	29	1	172	0	0
Maldives: Dhifushi Island, Male, Thulasdhoo island, Ungoofaaru	Nat 0.217 Ma: 0.212m **(23.0)** Dh: 0.001m (4.7) Th: 0.002m (4.3) Un: 0.003m (4.5)	$10,366 (59)	(49)								26[13]	31	20	170	100	100
Nepal: Hetauda and Pokhara	Nat 6.552m He: 0.193m **(0.8)** Po: 0.513m (1.3)	$1,159 (166)	(48)		17.8 (reduced from 19.8 in 2016)			✓	✓		7	35	2	224	0	100
Pakistan: Quetta and Khyber Pakhtunkhwa	Nat 88.979m Ma:0.404m (2.6) Qu:1.001m (2.3)	$1,480 (166)	(37)	✓	38.8	1	✓	✓		~26% loss GDP	-5	41	3	74	2	86
Sri Lanka: Kandy, Badulla, Panadura	Nat 4.220m Ka: 0.109m (4.6) Pa: 0.030m (4.1)	$3,918 (133)	(40)								16	32	34	237	65	100
India:	Nat 508.368m	$2,274 (140)						✓		~23% loss GDP	-	-	-	-	-	-

10 https://weatherspark.com/compare
11 "Severely impeded from achieving water security in seven of the ten components: low levels of access to safely managed drinking water and sanitation services (Components 1 and 2); health, measured by high WASH-attributed mortality (Component 3); water quality (Component 4); water value (Component 6); water governance (Component 7) and water resource stability with high interannual variability and low storage capacity."
12 Thimphu data was not available, used Paro instead.
13 Dhifusshi data not available, used Meero. Thulaadhoo data not available, used Viligili.

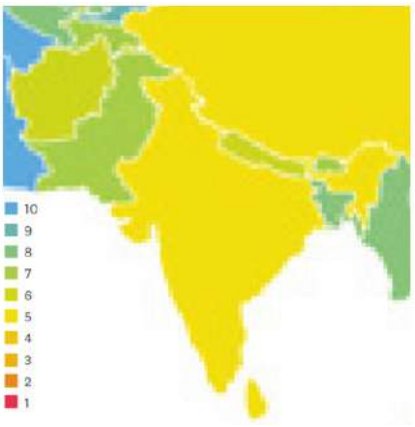
Table 2: Country WASH progress

	HH				School			HCF				
	WS	**SAN**	**FSM**	**Hygiene**	**WS**	**SAN**	**Hygiene**	**WS**	**SAN**	**Hygiene**	**SWM**	**Cleanliness**
BD **JMP 2023**	Urban WS: 54% safely managed, 44% basic service, 2% limited service 97.6% <30mins, 97.1% sufficient 0.2% RWH, 1.3% bottled water 52.1% e.coli, 90.3% arsenic	Urban San: 29% safely managed, 27% basic, 35% limited, 10% unimproved		Urban Hygiene: 67.5% basic, 25.8% limited, 6.6% no facility MHM: 97.1% private place to wash + change, 98.4% use of sanitary pad 20.7% exclusion during menstruation	Urban WS: 85% basic service, 13% limited service, 2% no service	Urban San: 50% basic, 50% limited	Urban Hygiene: 47% basic, 48% limited, 5% no facility	Urban WS: 90% basic service, 10% limited service	Urban San: 28% basic, 69% limited, 3% no service	Urban Hygiene: 52% basic, 48% limited	Urban SWM: 16% basic, 81% limited, 4% no service	no data
BT **JMP 2022**	Urban WS: 85% safely managed, 14% basic service 99.8% <30mins 61.6% E.coli	Urban San: 41% safely managed, 36% basic, 14% limited, 9% unimproved	Urban San: 34.2% sewered, 38.3% septic tanks, 25.9% other, 1% OD 8.5% shared 0% treatment	Urban Hygiene: 89.2% basic, 10.8% limited, 0.2% no facility	no urban: rural disaggregation			no urban: rural disaggregation				
IN **JMP 2023**	Urban WS: 96% basic service, 3% limited, 1% unimproved	Urban San: 43% safely managed, 42% basic, 15% limited,	Urban San: 12.4% septic tanks, 87.6% other 0% treatment	Urban Hygiene: 85.7% basic, 11.8% limited, 2.5% no facility MHM: 99.3% use of sanitary pad 3.9% exclusion during menstruation	no urban: rural disaggregation			no urban: rural disaggregation				
ML **JMP 2023**	Urban WS: 99% safely managed, 1% unimproved	Urban San: 100% safely managed	Urban San: 48.1% sewered, 42.5% septic tanks, 0.1% other,	Urban Hygiene: 97.1 basic, 2.4% limited, 0.5% no facility	Urban WS: 100% basic service	Urban San: 96% basic, 4% insufficient data	Urban Hygiene: 18% no facility, 82% insufficient data	Urban WS: 55% basic service, 43% limited service, 3% no service	Urban San: 15% basic, 85% limited, 1% no service	Urban Hygiene: 80% basic, 20% limited	Urban SWM: 30% basic, 48% limited, 22% no service	Urban EnvC: 18% basic, 57% limited, 25% no service
NP **JMP 2023**	Urban WS: 23% safely managed, 67% basic service, 3% limited, 6% unimproved, 1% no service 96.5% <30mins 28.4% E.coli	Urban San: 45% safely managed, 34% basic, 17% limited, 3% no service	Urban San: 14.4% sewered, 55.0% septic tanks, 25.2% other, 4.2% OD 19.3% shared	Urban Hygiene: 82.4% basic, 16.2% limited, 1.4% no facility MHM: 88.6% private place to wash + change, 94.3% use of sanitary pad	no urban: rural disaggregation			Urban WS: 7% no service, 93% insufficient data	Urban WS: 7% no service, 93% insufficient data	no data	no data	no data

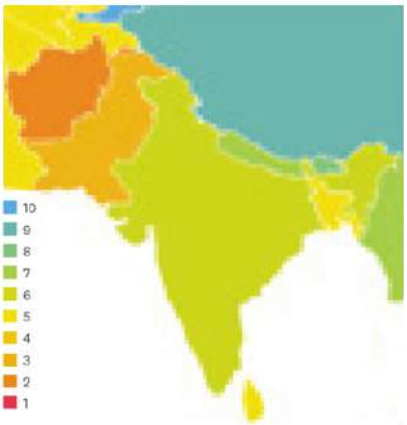
	HH				School			HCF				
	WS	**SAN**	**FSM**	**Hygiene**	**WS**	**SAN**	**Hygiene**	**WS**	**SAN**	**Hygiene**	**SWM**	**Cleanliness**
PK **JMP 2023**	Urban WS: 57% safely managed, 36% basic service, 5% limited, 2% unimproved 92.1% <30mins 80% E.coli, 96% flouride, 68% arsenic	Urban San: 82% basic, 8% limited, 9% unimproved	Urban San: 63.3% sewered, 22.8% septic tanks, 5.5% other, 2.4% OD 7.3% shared	Urban Hygiene: 89.6% basic, 9.1% limited, 1.3% no facility MHM: 89.4% private place to wash + change, 89.8% use of sanitary pad 21.8% exclusion during menstruation	Urban WS: 83% basic service, 1% limited service, 16% no service	Urban San: 66% basic, 18% limited, 16% no service	no data	no urban: rural disaggregation				
SL **JMP 2023**	Urban WS: 93% safely managed, 15% basic service, 1% unimproved 99.2% <30mins, 91.8% sufficient 4.5% bottled water 93.7% e.coli	Urban San: 96% basic, 2% limited, 2% unimproved 5.4% shared	Urban San: 7.1% sewered, 23.2% septic tanks, 68.1% other 0% treatment	Urban Hygiene: 93.4% basic, 3.4% limited, 2.9% no facility	no urban: rural disaggregation			Urban WS: 100% basic service	Urban San: 8% no service, 92% insufficient data	no data	Urban SWM: 47% basic, 51% limited, 1% no service	no data



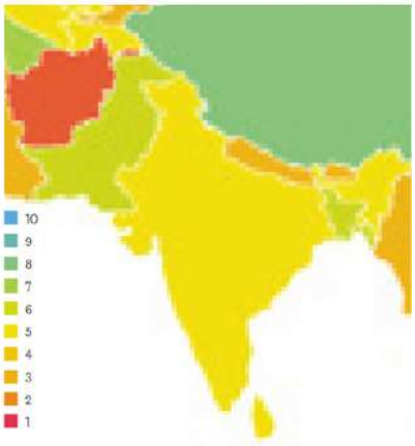
National water security mapped globally, based on a score of 1-100



National scores for Component 1 . Drinking water based on access from basic to safely managed service in 2020 (JMP, 2020 data) .



National scores for Component 2: Sanitation, based on access from basic to safely managed service in 2020 (JMP, 2020 data)



National scores for water governance based on IWRM implementation

Fig 2: 2023 Global Water Security Assessment extracts[14]

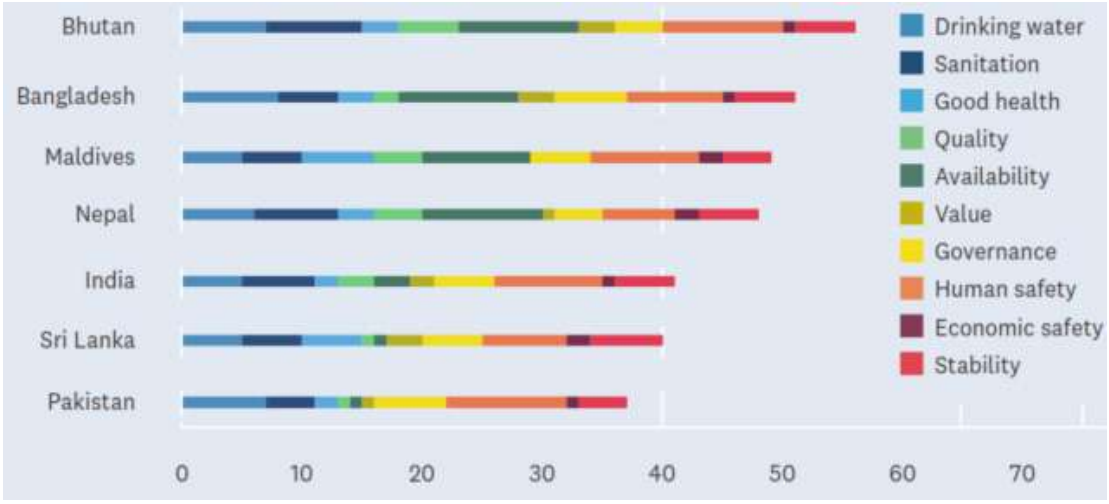


Fig 3: National water security scores ranked for the Asia-Pacific. Scored by 10 components[15]

14 Figure A and Map 1,2 &7 extracts from 2023 Global Water Security Assessment, UN, 2023
15 Figure 17, extract from 2023 Global Water Security Assessment, UN, 2023

3 Synthesis of country reports

As noted in the methodology, this synthesis followed a PESTLE framework, and this report follows that structure.[16]

3.1 Political

3.1.1 Mind the policy -gap

National: In all cases there is multiplicity of actors, government, private and societal, as well as the usual gaps and overlaps in legislation and responsibility. Nepal mentions that the Pokhara Metropolitan Environment and Natural Resource Protection Act 2020 is *"dedicated to the safeguarding of water resources, with a pronounced focus on the preservation of watersheds"* but that the city authorities have *"not yet undertaken the development of these essential procedures, indicating a significant gap in the Act's implementation."*

Implementation gap: Bangladesh also identifies gaps between acts and implementation. Under the Union Parishad Act the agency is responsible for *"39 types of functions, including water supply, but sanitation and hygiene are not mentioned"* and they *"can impose penalties for polluting the water, and environment, etc., and unhygienic toilets, urinals, etc"* but many officials and citizens are not aware of these provisions. FGD participants consistently had no or low awareness of existing legislation, and *"almost all the officials agreed to the change or formulation of the regulations regarding WASH, especially FSM."*

Regarding the roll out of the CWIS approach "it is essential to bridge the gap between policy creation and effective execution by fostering partnerships between government bodies, NGOs, educational institutions, and technology stakeholders."

The most striking gap reported was in Pakistan where the National Drinking Water Policy 2009 states that national government has no role in implementation, thus there is no Ministry responsible for water or sanitation. Instead implementation is the responsibility of provincial and local government institutions. No members of health, education, women, social welfare or finance agencies appear to have been consulted in drafting the National policy.

In any case, Pakistan's provinces were of the opinion that legislation was their domain, and thus none have taken serious steps to implement the National Drinking Water Policy! Khyber Pakhtunkhwa only formulated their provincial policy in 2015 and formulated a corresponding Drinking Water Act in 2020.

16 In WASH there is potential for significant overlap between the PESTLE categories, this CAWST resource was used as a guide: https://washresources.cawst.org/en/resources/03aa09e8/pestle-context-assessment-guide

The Khyber Pakhtunkhwa Drinking Water Policy 2015 is comprehensive but ambitious, 14 objectives are listed, but many are not "SMART", making progress monitoring difficult.

Khyber Pakhtunkhwa, FANSA Pakistan, has identified weaknesses within the existing provincial drinking water policy as their area of focus:

- Lack of policy guidelines and regulation
  - Province has full responsibility for regulation and enforcement, although national guidelines suggest Surveillance Agencies are to be established, none yet exist
- Insufficient information about water recharge and catchment
  - Establish Water MIS
- Lack of baseline and data collection mechanism
  - Prepare sub-divisional master plan, map current schemes and water demand
  - Propose Drinking Water Management Information system
- Low hygiene awareness
  - Hygiene training and awareness
- Duplication and lack of coordination
  - Policy assigns coordination role to Planning Department instead of keeping it within PHE which has limited role in water sector. Discussion and suggests move to Local Government, Elections & Rural Development Department
- No focus on asset management
  - Missing link between academia and water departments
  - Realistic operationalisation not been considered, generic activities lack measurable targets e.g. "Move from ground water to surface water for economic and environmental reasons by year Y, installation of water meters on all new connections by year X, introduce volumetric tariff from year X, reduce non–revenue water to X level by year Y."
- Stunted growth of sector institutions due to frequent changes
  - Policy highlights the importance of reforms and pledges to introduce reforms

Fig 4: Khyber Pakhtunkhwa,FANSA Pakistan, drinking water policy gaps

However, Khyber Pakhtunkhwa, Pakistan, also identify other important issues which either they have no solution for or are not within the scope of the drinking water policy, particularly political interference which require very different solutions.

Politics: This focus on "hard" management issues is logical since the "soft" issues would all require significant changes to the politicisation which pervades the sector. The numerous policies and strategies which have been developed but remain unimplemented suggests there would be little benefit to develop more. Instead, national government can support provinces with technical assistance to formulate and implement local WASH legislation.

Political interests were also mentioned as a barrier in Bangladesh, however FANSA note that "engaging political supporters at the grassroots level can make advocacy efforts more manageable. These supporters not only participate in political movements but also take part in development-related issues. Collaborating with them on such issues can be advantageous if aligned with the targeted agenda." Further, "several NGOs have been successful in including their demands on WASH in the manifestos of political parties during election preparations. This approach has shown positive results in promoting development initiatives."

Although not explicitly mentioned, Nepal has had similar experiences which may provide opportunities for sharing, particularly to make WASH a non-sectarian issue, across all parties.

Bhutan notes the need for legislative reviews to consistently address "regulatory, financing, planning, monitoring, and sustainability aspects."

The tables below provide an overview of the legislation and agencies relevant to urban WASH as presented in the country reports. Table 3 and 4.

Of course things are not as clear cut as a table suggests and overlaps exist.[17] There are overlaps and gaps in agency responsibility, which is difficult to present in sufficient detail such a table. Similarly, we see here that while all countries have some national legislation for water supply and sanitation, whether implemented or not, specific legislation for urban areas is not always present. In each context the proactivity of government agencies varies as does the extent of civil society participation.

17 For clarity of presentation, where a policy applies to more than one WASH element, it is only listed once.

Table 3: Overview of concerned agencies.

	National/ regional/ state/ province							Urban specific			
	WS	**San**	**FSM**	**SWM**	**Standards for Schools/ HCFs**	**Anti-discrimination/ pro-poor**	**DRR/ climate change**	**WS**	**San**	**FSM**	**SWM**
Bangladesh	*Water Supply and Sewerage Authority *National Forum for Water Supply and Sanitation *Department of Public Health Engineering	*Medical Education and Family Welfare Division	*Ministry of Local Government, Rural Development, and Cooperatives		*Ministry of Health and Family Welfare		*Ministry of Environment, Forest, and Climate Change	*City Corporations	*Union Parishads		
									*Local Government Engineering Department		
Bhutan	*Ministry of Labour and Human Resources for OHS *Royal Centre for Disease Control	*Ministry of Works and Human Settlement *Tourism Council of Bhutan	*National Environment Commission	*Ministry of Economic Affairs for industrial waste	*Ministry of Health *Ministry of Education	*Gross National Happiness Commission	*Ministry of Home and Cultural Affairs	*Thromde Administration *Dzongkhag Tshogdu *Gewog Tshogde			
India:	*Ministry of Jal Sakthi *Department of Drinking Water and Sanitation	*Ministry of Panchayat Raj & Rural Development * Department of Panchayati raj and Rural Development			* Public Health Engineering Department			*Gram PANCHAYAT (GP) *Village Water and Sanitation Committee/ Pani Samiti			
Maldives	*Water and Sanitation Department	*Ministry of National Planning and Infrastructure	*Environmental Protection agency *Utility Regulatory Authority		*Health protection agency		*Ministry of Environment and Energy *National Disaster Management Center *Health protection agency	*Atoll/ Island Councils *MCCEE, Ministry of Planning and Agriculture, Tourism, LGA, City Council, MWSC, FENAKA, STELCO, ALTEC, Villa Utilities councils, Health, MFDA, HPA			

	National/ regional/ state/ province							Urban specific			
	WS	**San**	**FSM**	**SWM**	**Standards for Schools/ HCFs**	**Anti-discrimination/ pro-poor**	**DRR/ climate change**	**WS**	**San**	**FSM**	**SWM**
Nepal	*Ministry of Water Supply *Department of Water Supply and Sewerage Management	*Ministry of Water Supply *Department of Water Supply and Sewerage Management	*Ministry of Water Supply *Department of Water Supply and Sewerage Management	MOFAGA	Ministry of Education, and Department of Education, Ministry of Health and Department of Health		Ministry of Environment – Climate Change Ministry of Home Affairs - DRR	*Hetauda Water Supply Management Board *Nepal Water Supply Corporation	Hetauda Sub Metropolitan City Pokhara Metropolitan City *Federation of Drinking Water and Sanitation Users Nepal *Water and Sanitation Users Committee		Hetauda Sub Metropolitan City Pokhara Metropolitan City
Pakistan	*Pakistan Quality Control Authority	*Ministry of Agriculture * Ministry of Irrigation			*Ministry of Health *Ministry of Secondary Education		* Ministry of Climate Change * Ministry of Environment	*Metropolitan Corporations *City Water and Sanitation Authorities *Town Municipal and Tehsil Administrations *City Development Authorities *Education Department *Health Department	*Provincial Public Health Engineering Department *Provincial Disaster Management Authorities *Local Government, Elections & Rural Development Department *Public Health & Engineering Department *Province Planning and Development Department		
								*Irrigation and Power Department			
Sri Lanka	*Ministry of Water Supply *National Water Supply and Drainage Board *Department of National Community Water Supply *Water Resources Board *Mahaweli Authority	*Marine Environmental Pollution Control Authority *Ministry of Industrial Development *Board of Investments *Department of Irrigation *Sustainable Development Council	*Public Utilities Commission of Sri Lanka *Urban Development Authority * Marine Environmental Pollution Control Authority		*Ministry of Education *Department of Education (Provincial) *Ministry of Health *Department of Health (Provincial)		*Central Environmental Authority * Department of Coast Conservation and Coastal Management	*Municipal/ Urban Councils *Provincial Councils/ Pradheshiya Sabhas			
								*District Coordinating Committee *Provincial Education Authorities	*Public Health Inspector (Provincial)		

Table 4: Overview of acts, policies, regulations, plans..

	National							Urban specific			
	WS	**San**	**FSM**	**SWM**	**Standards for Schools/ HCFs**	**Anti-discrimination/ pro-poor**	**DRR/ climate change**	**WS**	**San**	**FSM**	**SWM**
Bangladesh	*Water Act 2013, *Bangladesh Water Rules 2018 *National Building Code 2020	*National Building Code 2020	*Institutional and Regulatory Framework for Faecal Sludge Management			*Pro-Poor Strategy for the Water and Sanitation Sector in Bangladesh 2020	*National Adaptation Plan (2023–2050) *Strategies and Technical Guidelines for Climate-Resilient Water Supply and Sanitation Services 2020	*Local Government (City Corporation) Act 2009	*Local Government (City Corporation) Act 2009	*Local Government Faecal Sludge and Sanitation Management Guidelines	
Bhutan	*Water Act 2011 *Drinking Water Quality Standard, 2016 *National Integrated Water Resources Management Plan 2016	*National Sanitation and Hygiene Policy 2020 *National Health Policy 2010 *Building Rules 2002 *Guideline for Differently-Abled Friendly Construction 2017	*Waste Prevention and Management Act of 2009	*National Environment Protection Act 2007	*National Education Policy *National Health Policy 2010		*National Environment Protection Act, 2007	*Local Government Act of Bhutan 2009			
Maldives	*National Water and Sewerage Act/ Policy 2020 *Strategic Action Plan (2019-2023)	National Water and Sewerage Strategic Action Plan (2020-2025) *National Strategy for the Development of Statistics (2021-2030)			*School Health Policy		*National Climate Change Policy (2017)	*Male Water and Sewerage Master Plan (2021-2035)			

	National							Urban specific			
	WS	**San**	**FSM**	**SWM**	**Standards for Schools/ HCFs**	**Anti-discrimination/ pro-poor**	**DRR/ climate change**	**WS**	**San**	**FSM**	**SWM**
Nepal	*National Water, Sanitation, and Hygiene Policy 2023 * National Drinking Water Quality Standard 2022 What about WASH Act 2023??	*Drinking Water and Sanitation Act 2022		* Environment and Natural Resource Protection Act * Solid Waste Management Regulation				*Provincial WASH Act/ Bill *Metropolitan Education Regulations *Water Resource Use Procedure	* Local Government Operation Act 2017 *Pokhara Metropolitan Education Regulation 2017 *Sub-Metropolitan Water Resource Use Procedure 2020	*Sub-Metropolitan Sanitation Management Procedure 2023	*Environment and Natural Resource Protection Act 2021 *Sub-Metropolitan City Health and Sanitation Service Act 2018 * Solid Waste Management Regulation
Pakistan	* National Water Policy Framework 1999 * National Drinking Water Policy 2009 * National Standards for Drinking Water Quality 2008 *Groundwater Management Action Plan *Participatory Groundwater Management Strategy	*National Sanitation Policy 2006			*National Behavioural Change and Communication Strategy and Action Plan for Safe Drinking, Sanitation and Hygiene 2010-2015		*Pakistan Environmental Protection Act 2014 *Balochistanistan Conservation Strategy	*Provincial Drinking Water Policies (KP 2015) *Provincial Water Act (KP-2020, incls sanitation, not operationalised)	*Provincial Sanitation Policy (KP -draft) *Local Government Act 2019	*Khyber Pakhtunkhwa WASH Sector Plan (2019-2030)	*Khyber Pakhtunkhwa Environmental Protection Act 2014 *Provincial Environmental Policy
Sri Lanka	*Drinking Water Supply Policy 2001 (not implemented) * Urban Water Supply Policy 2002 (not implemented) * Water Services Reform Bill 2003 (not enacted) *Water Supply Master Plan	*National Policy of Sanitation 2017/ 2022 *Sanitation Master Plan						*Urban Water Supply Policy 2002 (not enacted) *Water Services Reform Bill 2003	*Municipal Ordinances *Urban Ordinances *Act of Urban Development Authority		

For example, Sri Lanka outlined that the Drinking Water Supply Policy and Rural Water Supply and Sanitation Policy were both enacted in 2001 but were never really implemented. It is hoped that the new National Policy of Sanitation (2023) will partially address this situation, but a specific policy for urban (and one for rural) water supply is required.

Furthermore, FSM legislation was not identified, nor responsibility for school, healthcare, or public facilities. Considering that all urban residents are producing faecal sludge every single day, it is imperative that responsibility is clearly assigned through legislation.

Civil service in Pakistan, Bangladesh, and Sri Lanka the issue of shifting priorities was mentioned in relation to changes in governing party. Changes in staff, transfer of responsibilities from one agency to another and rearrangement of agencies were just some of the issues mentioned. These overarching issues, including ongoing effects of decentralisation and devolution affect most of the project countries to a greater or lesser extent, impacting coordination and accountability for WASH services. Balochistan, Pakistan, notes that there is a constant need to building the capacity of local institutions, substantial gaps in adoption, implementation, and enforcement of legislation.

3.1.2 Data

Although the Rising for Rights initiative is part of the drive to reach the last unserved groups, many of the country reports referred to 'inequalities in service' or 'marginalised groups' without specifying who they are. This suggests that they have yet to identify them or there is a lack of political will to acknowledge and serve them.

Planning: For example, Bhutan mentions that household data is collected annually by Ministry of Health, but there is a lack of *"accurate data on WASH coverage and access…, making it difficult to track progress and target interventions effectively"* as seen by continued disparities in sanitation access. FANSA Bangladesh suggest development of *"a comprehensive and integrated IMIS for FSM, particularly waste management activities, including a roadmap for implementation, a budget for investment, and a plan for capacity building and training. This IMIS could be linked with NID and connected with households through GIS. Then it will become easier to provide services to the doorsteps of the citizens."* In fact the Department of Public Health Engineering already hosts a National Sanitation Dashboard.[18]

FANSA Maldives notes a need to "produce updated and reliable data on SDGs… ensure accurate monitoring of progress and informed decision-making" while India discusses inclusivity and "challenges for the poorest households", but specific identification of groups and targeted interventions are not mentioned.

Khyber Pakhtunkhwa, Pakistan, mentions that the health and education sectors have well established Management Information (System (MIS) systems, but there is no provincial WASH Monitoring and Evaluation (M&E). The Khyber Pakhtunkhwa Drinking Water Policy requires Master Plans for each district, mapping population, water demand, water availability, current sources, potential sources and other technical issues to address. Though the Local Government, Elections & Rural Development Department have some data, Public Health Engineering Department would like to establish a GIS enabled district level M&E framework. Up to date and rural: urban disaggregated data on water sources and service coverage could benefit from shared MIS to avoid duplication of data collection activities. Unlike the public sector, some Water and Sanitation Service Companies have systems and capacity to analyse data number and plan for the future.

Balochistan, Pakistan, noted that the lack of data prevent assessment of the effectiveness of different agencies, their interventions, nor *"identify areas of improvement, and ensure that each department is meeting its specified objectives."* Further that, *"monitoring helps track the allocation and utilization of resources, ensuring that funds, manpower, and other resources are utilized optimally and that overlapping roles are minimized. This contributes to cost-effectiveness and prevents duplication of efforts."*

Identifying unserved: FANSA Nepal recommends greater inclusion of disaggregated data for gender, age group, disability status, and identification of poor and marginalised groups to understand *"the reach and impact of health programs among different population segments, allowing for targeted interventions and equitable service delivery."*

They report that Pokhara Metropolitan City, Nepal, has outlined several WASH and inclusion related objectives in its annual plans and programs (Fig 5):

18 http://sanboard.gov.bd/

- Study to assess the benefits received by people with disabilities, with a focus on providing targeted support
- Programs tailored for gender and sexual minority communities
- Expanding the urban poverty alleviation program to cover all wards.
- 14 million rupees (~US$ 106,000) for housing construction programs to benefit underprivileged households
- Initiating land acquisition for construction of a modern landfill site
- 15 million rupees (~US$ 113,500) for construction of public toilets under the "One Ward, One Smart Toilet" campaign
- 100 million rupees (~US$ 757,000) for construction and maintenance of water supply systems under the "One Household, One Tap" campaign

Fig 5: Plans for serving the underserved in Pokhara

Khyber Pakhtunkhwa, Pakistan, also notes that policies make no requirement to assess water and sanitation access for the poor and marginalised; disaggregation is redundant since budget allocation is political rather than driven by technical or equity needs. However, the Pakistan Social and Living Standards Measurement Survey disaggregates rural: urban data and by poverty quintiles and the 2018-19 data indicates service inequalities correlated to poverty, with 30% of Khyber Pakhtunkhwa's poorest quintile (~12m people) using unimproved water sources, ten times more than the richest quintile.

Bhutan's report mentions reaching *"the most vulnerable population that were left out"* but it is not clear exactly who they are, the crux of WASH intersectional disadvantage. One exception to this are informal/temporary settlements in urban areas for migrant construction workers who use ad hoc pit toilets. Bhutan's report acknowledges that *"although the principles of equity, accessibility, and affordability are implicit in Bhutan's legal and policy documents, there is lack of guidance on how to translate these principles into practice in urban environment"*

It is not possible to prioritise investment activities without understanding what costs and benefits will arise, but for resource-constrained agencies, regular data collection can feel an extra burden. However, all country reports recognised that data was essential for decision making, whether it be which population segments remain unserved or which behaviour change messages need further work.

Data sharing: Failure to share data and data quality/ not aligned with SDGs was mentioned by Pakistan and Sri Lanka, which causes duplication of data collection, use of different indicators and gaps in knowledge. Reluctance to share data needs further investigation and may indicate accountability issues.

Agencies which are disinclined to share information may be more motivated to do so when they realise that participation may in fact reduce their workload, by clarifying and distributing responsibilities to agencies with overlapping roles but greater motivation or capacity.

Conversely key informants in Bangladesh were open to the idea of data sharing particularly to avoid duplication and coordination of different government agencies.

For M&E Specifically in relation to CWIS, data is needed on water and sanitation service levels, technical functionality (quality, quantity, accessibility, and reliability) as well as service losses, operation and maintenance (O&M) costs etc. Data, specifically economic data provides the basis for influencing decision makers and transparent prioritisation of interventions, as well as identifying duplication of efforts by different agencies.

The Maldives specifically mentioned the need for M&E in order to raise awareness about climate change and its consequences, in order to facilitate inclusive and participatory climate change planning and implementation.

Although CWIS's main message is 'business as unusual' and to 'embrace innovation', failure to properly understand the situation may lead to serious consequences. For example, developing solar energy for water pumping or lifting technology or introducing water efficient irrigation for farmers who use private sources, will probably not reduce usage, but just encourage them to grow more for the same consumption.

For countries that lack regular government data, the MICS or DHS data can be used as a starting point, making certain assumptions e.g. screen out rural results, analyse to identify which demographic indicators correlate with poor service or behaviours, which service levels need to lifted up etc.

An internal point on data is documentation of the Rising for Rights activities for sharing and learning between project countries, though this was not explicitly mentioned in the country policy reviews. It is apparent that the lessons from these very diverse project areas, including "how not to do it", should be a resource to prevent reinvention of the wheel in the future.

3.1.3 Water use competition and priorities

There appears to be a lack of information on exactly how much water is for domestic consumption versus competing uses, agriculture, livestock, industry etc. For example, Pokhara's Metropolitan Environment and Natural Resource Protection Act targets preservation of watershed but *"there is a notable absence of comprehensive data disaggregation concerning the utilization of water resources and the identification of beneficiaries."*

Both Pakistan and Sri Lanka note water-use competition with agriculture, such as the 2020 Khyber Pakhtunkhwa Water Act drafted by the Provincial Irrigation Department which focuses on water resources, rather than drinking water. However, Khyber Pakhtunkhwa, Pakistan, report that the provincial Drinking Water Policy prioritises drinking water over any other use, but presumably does not mention water use competition with agriculture.

Balochistan, Pakistan, notes that the Provincial Water Policy includes for Water Budget Planning, i.e. *"formulating and implementing water budgets tailored to the actual needs of diverse sectors"* including mining and industry. The Groundwater Management Action Plan and Participatory GW Management Strategy include for *"prioritizing sectors based on the identified* [water] *needs and demands of the community".* This is essential in light of the *"grim picture of the degraded environmental conditions in the province. Desertification, propelled by factors such as human and small stock population growth."*

Further, both the women's and men's FGD expressed concern about the high price of water tanker deliveries compared to public piped water, and *"the need for transparent and equitable water distribution mechanisms from public sources, addressing concerns about water diversion to private interests."*

For countries experiencing water stress, or expected to experience stress with climate change, the basic issue of water prioritisation has to be addressed politically. There is little point targeting households with "efficient water use" messages if the agriculture sector is using 90% of water resources.

For example Bhutan's 12th Five Year Plan recognises two priorities, i.e. water for both drinking and irrigation by 2021, addressing the issue of low accessibility despite high water availability, mainly due to *"source management, inadequate infrastructure development and issues in governance and sector-based management systems."*

Bhutan's National Sanitation and Hygiene Policy 2020 also acknowledges the relation between sanitation and hygiene on disease as well as overall health, happiness, however the Desuung National Service Water Project appears to prioritise water for agriculture. FANSA Bhutan suggests urban wastewater recycling and reuse for agricultural purposes, using managed aquifer recharge to address water use competition. Decentralised community water and wastewater management are potential solutions to reduce water scarcity. Similarly Balochistan, Pakistan, mentions the need to "*install water processing plants, treating and reusing water for various purposes."*

It has been historically difficult to gather data on the impact of poor-WASH on economic activity or health; be it low productivity, lost school or work days, health care costs etc. The economic argument is the most effective for influencing decision-makers, but data is absent. Countries need to develop proxy data in cooperation with Health agencies, to advocate for WASH budget allocation, be it lost school days or in-patient admissions. Balochistan's 44% *"unknown collectors of water"* are an example of failure to acknowledge lost economic time arising from inequalities in WASH services.

3.1.4 Communication, coordination, collaboration, and accountability

The issue of coordination exists in all contexts to a greater or lesser extent. An example is the Khyber Pakhtunkhwa Drinking Water Policy 2015 which appears to have failed to consider other necessary actors, health, education, climate/ disaster response etc in its drafting.

Inter-departmental coordination on planning, budgeting and development for urban areas falls to Pakistan's provincial Planning & Development Departments. In addition, they maintain regular contact with their national agency, Ministry of Planning Commission, and are also responsible for donor coordination. However, Planning & Development Departments have no outreach activities, and at present community engagement, such as hygiene interventions, only occur if it is a donor requirement.

With the creation of water and sanitation service companies for a number of urban settlements in Khyber Pakhtunkhwa, Pakistan, there are now three actors, the service companies, Public Health Engineering Department and the Tehsil Municipal Administrations. There is no formal or informal coordination platform nor any legal requirement for source and resource planning.

The Khyber Pakhtunkhwa, Pakistan, report states that Government of Khyber Pakhtunkhwa has made efforts *"to ensure coordination among themselves, to synchronize their policies and interventions"* but is not specific on who and how this is being achieved, whether it has been formalised and if agencies are complying with agreed decisions. They report that though a *"policy review committee has been prescribed in the KP DWP … the committee has* [not] *met in last 8 years, nor it has representation from health, education and environment departments in the committee."*

Even a UNICEF supported "KP WASH Sector Strategic Plan - KPWSSP" for 2019—2030 has yet to be approved by the government and *"implementation on the strategic plan is moving at snail pace"*, lacking specific action plans for short, medium and long term. Instead, *"multi-sectoral coordination is* [limited to] *implementation of donor funded multi-sectoral projects."* It is apparent that political motivation to support WASH is lacking coupled with no accountability, as well as limited financial and human resource (HR) capacity.

The situation in Balochistan, Pakistan, seems a little different, with many stakeholders recognising the need for more coordination and collaboration and the opportunity for FANSA to support advocacy for marginalised groups, with many key informants mentioning the need for diverse perspectives and participation. Further, political and private interests seem to be less pervasive than in Khyber Pakhtunkhwa, Pakistan. It could be that the more pressing climate related impacts have forced residents and government agencies to work more collaboratively to solve the problem of water supply and quality as well as related solid and faecal waste pollution.

Bangladesh notes at present there is no standing committee on sanitation or hygiene listed among the mandatory city corporations committees required by the City Corporation Act 2009, though waste water and water are already covered. In fact under the Union Parishad Act 2009 13 standing committees including one for sanitation, water supply, and sewage are supposed to be established, but in practice it will be difficult to have so many committees due to limited manpower and budget. They also report that duplication of sanitation projects and investments occurs, but do not share examples or details of how this arises, presumably through lack of coordination.

Similarly, Sri Lanka reports that a quarterly Water Sector Coordination Meeting has not been held by the Water Ministry for over 5 years. At present *"no common forum is available to handle any issues"* although some agencies meet in smaller groups on specific shared issues, for example for disaster management. Sri Lanka also note low participation of agencies in consultations for new legislation, but also failure to ensure inclusion of all stakeholders, particularly civil society.

Attendance at coordination meetings is often a challenge and requires meetings to be succinct and on topic. Balochistan (Pakistan) and Sri Lanka note failure to send suitably experienced or empowered staff to discussions, a sign that such activities are not considered a good use of time. However, as demonstrated by nearly all countries while undertaking their policy reviews, online meeting technology means that physical attendance is now a thing of the past. Greater internet coverage combined with etiquette protocols may encourage greater participation.

It may not always be appropriate for a single agency to always lead coordination activities in every country, but to rotate the position, maintaining engagement and responsibility of all parties. This can also be seen as a capacity building activity, providing leadership experience, while giving agencies time to adjust for rotation of civil servants, elections etc.

On the positive side, Nepal shares details of the Local Government Operation Act 2017 which outlines coordination at different levels and for different purposes such as disasters, both with other government but also non-government agencies.

Bhutan notes the meeting of the B-WASH Cluster for collaboration at central level: govt, CBS, NGOS, private sector, and UN for harmonisation of standards and disaster response while the Religion and Health Project of the Council for Religious Affairs is the lead coordinating agency for WASH in monastic[19] institutions. Bhutan's Ministry of Health plays a lead role in coordinating WASH "strategies and activities across sectors and national ministries".

However, coordination has proven more difficult for urban areas, particularly for inclusion of civil society representatives to ensure appropriate design, procedures, service delivery structures and financing.

The Maldives note the Central Region of Maldives (CRM) WASH Coordination Forum where FANSA, civil society and local NGOs discuss WASH issues, share information, develop action points, and build on best practices. It is not clear if government agencies attend this forum, and if so at which levels. They suggest establishment of ward level councils for discussing climate and WASH issues, though they do not specify the steps needed to implement this.

3.1.5 Potential case studies

Regardless of the fact the Sri Lankan Urban Water Supply Policy 2002 was never fully enacted, it seems that the National Water Supply and Drainage Board (NWSDB) has the political will and technical know how to make positive change. In addition to operating sewerage schemes the Board:

- Supplies ~ 42% of population through 333 water supply schemes.
- Provides toilets and financial assistance for toilet construction in poor communities.
- Provides sanitation facilities for schools, public places, and marginalized communities.
- Operates and maintains sewerage schemes for some major cities, large housing estates, key government building, and several industrial estates.
- Sets and collects tariffs for water and sewerage services.
- Conducts awareness programmes on WASH for school children, factory staff, sanitation workers and CBOs.
- Assists other agencies with technical support and capacity development programmes.

Similarly, Khyber Pakhtunkhwa, Pakistan, infers that some of the urban Water and Sanitation Service Companies are doing well and are soliciting feedback from customers.

It would be interesting to develop case studies of NWSDB and the successful Water and Sanitation Service Companies to better understand their motivation and how they have developed systems and capacity to provide sustained services.

CWIS was introduced to Bangladesh in 2020 and one interviewee mentioned successful examples in Khulna, Kushtia, and the establishment of CWIS-FSM Support Cells and training of "CWIS capacity checkers".[20] It may be useful for the FANSA to visit these areas to identify activities to work together on.

3.2 Economic

3.2.1 Population migration and growth

In many countries, urban migration combined with population growth will continue to outpace access to safe sanitation. Particularly for sewage and FSM, attempts need to be made to design for future loading. The consequences of failure are already visible in the FANSA countries, with negative effects on the environment, health and water using industries. This equally applies to water supply, but in terms of the criticality of watershed and source protection, the imperative of ground water recharge, grey water reuse and recycling becoming imperative.

Bhutan notes that rapid urbanization is "increasing pressure on facilities with inadequate capacity of Local Governments to maintain facilities" posing health threats to residents. They also report a need to "develop innovative solutions for infrastructure development in remote areas" because many places "are at risk of water

19 Monastic includes both monasteries and nunneries.
20 https://iwa-network.org/iusstory-bangladesh/

shortages caused by outdated water supply systems and insufficient infrastructure for rainwater harvesting and storage."

While Bangladesh notes a general swelling of the urban population, Balochistan's women's FGD noted the problem of failing to design and maintain suitably sized sanitation infrastructure which leads to blockages as residential areas are connected.

Bangladesh advises that the CWIS framework for Pourashavas includes objectives to address governance and urban planning, fiscal sustainability, service delivery, cost recovery, natural resource protection and climate resilience. Their first steps include the establishment of a CWIS Steering Committee and conducting a WASH baseline assessment to determine current service levels as well as identify the needs of different population segments. This baseline will enable subsequent *"monitoring and reporting on sanitation conditions at the district and ministry levels to ensure accountability."* A number of key considerations for the development of the CWIS framework have been identified, i.e. affordability, equity, climate resilience, technological innovation and community engagement.

3.2.2 Funding WASH

This issue will be addressed in greater detail in the funding synthesis report, however Bangladesh notes that local government relies *"on Pourashava tax and government funds as revenue sources for Pourashava WASH",* which means that whatever limited services exist, are being provided without charging tariffs. There seems at present no attention to including SWM or FSM services within planning budgets, despite some donor funded projects.[21]

A few country reports specifically mentioned the issue of proportional budget allocation, particularly for sanitation, which continues to lag behind water, both in coverage and functionality. This suggests that the political understanding of the water: sanitation nexus is lacking, critical in countries which "wash" rather than "wipe". In such situations, demonstrating economic costs and benefits is one way to influence decision makers.

Sri Lanka notes that sanitation has historically received a much smaller budget than water supply, made worse by reduction in aid following the COVID pandemic. The Sri Lankan government has therefore sought financing from domestic and international sources. NWSDB has secured loans totalling to ~ LKR 870 billion (US$2.84b). However, in the past 50% of loans for urban water supply and 100% or sewerage projects was reimbursed by the government. Presently 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 shoulder the full value of foreign loans in future.

Pakistan's National Drinking Water Policy does not mention what financial resources are currently assigned to local government agencies nor gives budget allocation to achieve policy goals and targets. Khyber Pakhtunkhwa, Pakistan, 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."*

Pakistan's Public Health Engineering Department work in each province, delivering water supply infrastructure. However, small budgets distributed widely mean that large schemes require donor financing. Regarding FSM, there is at present no water or wastewater treatment in Khyber Pakhtunkhwa, but also no demand for desludging services since public drains are being used as sewers. Thus, despite diarrhoea and other water related illnesses, so far, no investment has been made in the management of faecal sludge or wastewater.

Bhutan notes the need for greater transparency of national and local WASH budget allocation, targeting marginalised groups and ensure financial accountability. 2018's 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.

21 Union Parishad Chairman of Muktinagar Union in Sagatha Upazila reports an ADB project as its current main funder, with 50,000 taka (US$ 450) and 28,000 (US$ 250) taka allocated for WASH and cleanliness respectively.

FANSA Bhutan highlight the need for a fully costed WASH plan to achieve the national and SDG targets, however the basic data to produce one is not available. Funds allocated and used for water, sanitation, and hygiene need to be clearly identifiable, allowing for robust financial monitoring and identification of the most effective interventions.

Bangladesh notes that Pourashavas have the authority to impose taxes for sanitation services and policies provide guidance on how taxes should be determined, based on volumetric pumping rate and other considerations. 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 there appear to major gaps between policy instruments and implementation in Bangladesh, with nearly all WASH authorities citing insufficient budget and manpower to undertake any consequential SWM or FSM activities. Equally there appear to be no financial recovery models proposed for services, relying entirely on grants or loans from development banks and donors or mobilising corporate social responsibility contributions from the private sector.

Nepal notes that the Pokhara City budget allocation for WASH is low at <2% of the annual budget, a smaller share compared to other essential service sectors.

3.2.3 Private sector principles and involvement

SDG6 has shifted focus from household sanitation access to addressing the full sanitation service chain. The need to "rethink the way sanitation infrastructure is funded and challenge approaches that subsidize sewers but not onsite sanitation, that do not embrace innovation and do not consider running costs" would probably benefit from involvement of the private sector.

Balochistan's policy review participants also note the need for cost recovery systems to sustain infrastructure but also to encourage responsible water consumption for both domestic and other uses. The water and sanitation service company approach implemented in Khyber Pakhtunkhwa may be able to share some insights with their Balochistan colleagues, instead of reinventing the wheel. As well as separating the regulator from the service provider, engaging the private sector acknowledges gaps in government capacity. Yet, both Khyber Pakhtunkhwa's Public Health Engineering Department and Local Government, Election and Rural Development Department have the mandate of "policy making" as well as being involved in "service delivery.

Conversely FANSA Balochistan,Pakistan, recommends engaging *"private companies for sanitation and cleaning services due to government resource constraints"* and FANSA Pakistan notes private sector participation in WASH consultancy services, construction, provision of machinery, spare parts and after sales services for water and sewerage works.

However, involvement of the private sector in any service provision requires an enabling legal environment, business incentives, market opportunities together with clear regulation and enforcement. These are not easy to do when government lacks capacity or political motivation. Thus, it is not simply a case of identifying technical solutions, but responsible agencies will need to coordinate with other actors to create the necessary conducive conditions for private sector provision of services along the sanitation chain: from small scale pit domestic emptying to O&M of sewage treatment plants (STP).

Khyber Pakhtunkhwa's report makes some very salient points regarding regulation of public and private WASH which they summarise as, *"a regulator's fundamental objective is to promote efficiency. To promote efficiency a regulator must ensure that service is broadly available, that service quality is appropriate to the needs and willingness-to-pay of users, and that the cost of service is justified by the quality."*

Bhutan mentions plans to explore proper cost recovery mechanisms to meet operational expenditure for urban WASH infrastructure as part of developing a National Sanitation and Hygiene Policy. However, this was delayed by the COVID pandemic and at present no budget is dedicated for operation and maintenance of WASH facilities, including monitoring and follow-up activities.

From the seven country reports, there are very few examples of successful private sector initiatives, or sufficient details to understand whether these would be transferrable to other contexts.

For example, from 2014-2016 Khyber Pakhtunkhwa, Pakistan, established Water and Sanitation Service Companies in 7 division headquarters, all pre-dominantly urban with World Bank assistance. These are among the first corporate WASH utilities in Pakistan. Technical, administrative, and financial control lies with a board of directors, in theory 33% are Khyber Pakhtunkhwa government staff and 66% private members. This was meant to ensure accountability for service delivery, but since government controls funds, some political influence persists which affects companies' financial viability and technical performance.

Even so Khyber Pakhtunkhwa, Pakistan, notes all seven Water and Sanitation Service Companies established "Citizen Liaison Cells" to address the real needs and demands of consumers. This approach is working successfully and addressing inequitable service delivery. For Tehsil operated schemes, Public Health Engineering Department has started to map districts to identify un-served areas.

Sri Lanka reports that the private sector is already highly involved in WASH (Fig 6);

- Provision of consultancy services
- Construction
- Operation of some water and sewerage plants on contract
- Provision of machinery, spare parts and after sales services for water and sewerage work
- Provision of vacuum tankers for emptying and disposal of on-site sanitation
- Building janitorial services

Fig 6: Current WASH services provided by private sector in Sri Lanka

Bhutan mentions that *"masons, plumbers and carpenters are directly employed by households to assist in the construction of sanitation facilities"* as well contractors for construction and maintenance of WASH infrastructure, school and other public institution facilities, where *"their involvement ensures the delivery of quality services".*

Bangladesh also notes that "government actively encourages the involvement of the private sector and NGOs in the WASH sector" and mentions the option for City Corporations to "outsource the treatment and disposal of faecal sludge, as well as the use and marketing of end products, to private sector or non-government organizations." It is not clear exactly what the sludge is used for, particularly in urban areas, but it is necessary to find some economic benefit in order to complete the service chain and they mention exploring "partnerships with organizations or government initiatives to implement effective solid waste collection, treatment, and disposal programs."

On this point Pokhara's Solid Waste Management Regulation "recognizes solid waste not merely as a byproduct to be disposed of but as both an economic and natural resource." Nepal highlights the need to "incorporate measures aimed at capacity enhancement, ensuring that those involved in solid waste management can operate more effectively and efficiently…. comprehensively address the occupational health and safety of sanitation workers involved in solid waste and faecal sludge management. This is essential to ensure the well-being of those who perform this critical and often hazardous task."

One thing to keep in mind is that there is no golden bullet, replicating technical or managerial examples from "developed countries" is not the answer.[22] South-to-South sharing is likely to be more beneficial than North-to-South[23] as was demonstrated by the sharing by Gates Foundation partners at the project inception meeting in 2023.[24] Most reports were of the view that market driven approaches would address service quality and introduce innovation,[25] but this has proven not to be the case for basic essential services in 'developed;' countries[26] and the example of the Tanker Mafia we will read in section 4.5.2. The private sector does not practice Doughnut Economics,[27] it does not acknowledge that natural resources are finite.

22 https://www.ircwash.org/blog/decolonising-wash-sector
23 https://www.engineeringforchange.org/news/nine-myths-dispel-global-water-sanitation-hygiene/, https://gh.bmj.com/content/5/7/e003164.full
24 i.e. sharing from IIHS, ASCI, ITN/BUET, Wateraid, CWISAN, and Tiller.
25 Referring from Balochistan's Policy Review, from p45, Bangladesh's Review Section 4.2, c)
26 https://journals.sagepub.com/doi/10.1177/1024529420964933,
https://www.see.leeds.ac.uk/fileadmin/Documents/research/sri/workingpapers/SRIPs-116.pdf
27 https://www.kateraworth.com/doughnut/

3.2.4 Leveraging tourism

Although tourism may be considered a competitor in relation to water supply, a few countries mention tourism as a driver for governments to provide safely managed water and sanitation services, particularly in public areas.

For the Maldives tourism constitutes ~30% of GDP and generates more than 60% of foreign currency earnings.[28] Therefore leveraging this financially motivated prioritisation may provide opportunities for CWIS interventions. At present Maldives and Sri Lanka report either lack of, or poor management of sanitation facilities in public places, particularly hospitals and travel hubs, which particularly impacts the elderly, women, children and people with disabilities.

Appropriate fee structures need to be developed to prevent economically challenged users resorting to open defecation. No examples of well managed public facilities were shared, but it is likely that other types of services need to be combined for economic viability, an area where the private sector models may be applicable.

Conversely Sri Lanka notes that important tourist and pilgrimage sites are served by sewerage systems maintained by NWSDB and Bhutan reports that the Tourism Council of Bhutan together with local governments are *"responsible for ensuring that highways have adequate sanitation and hygiene facilities."*

Nepal notes the introduction of Water ATMS, particularly in market areas, making drinking water cheaply available, but creating a solid waste problem from discarded paper cups.

3.3 Social

3.3.1 "Nothing about us without us"

Balochistan's Poverty Alleviation Strategy is one of the few documents which mentions "commitment to preserving and respecting local culture, traditions, customs, and identities." There was also the suggestion to "collaborate with local leaders and influencers to champion sustainable water management practices within their communities" which may or may not build on traditional knowledge showing appreciating for indigenous practices and governance systems.

However, a specific example of entrenched exclusion can be gleaned from the Pakistan Balochistan report. The researchers conducted interviews as well as women-only and men-only focal group discussions (FGD). The women's FGD identified issues of long distances for water collection, waiting for water tankers which prevents other economic activities, sanitation and menstrual hygiene challenges. Women's exclusion from activities during menstruation is noted as ~20% across all age groups in the Balochistan 2019-20 MICS.

However, these issues were not raised in any other discussion group, which means decision makers remain unaware of the specific problems faced by women, and thus it is unlikely that they will be addressed in any meaningful way. Furthermore, gender friendly toilet designs may vary between countries, and possibly within countries due to different religious or social norms. For the same reason the situation of marginalised groups will vary. Facilitated sharing can overcome individuals' assumptions and preconceptions, enabling a wider and more flexible range of solutions to be developed.

Therefore, one of the Balochistan FGD suggestions to *"conduct a survey to identify the needs of disabled individuals and construct inclusive latrines for them"* is pertinent, acknowledging one's own knowledge gaps and the need to involve the affected groups directly.

FANSA Nepal's focus is on improving inclusivity, especially for people living in informal settlements, people with disabilities, sexual minorities, and sanitation workers, as well as revision or creation of new legislation for the project areas. The report identified the following areas for policy strengthening (Fig 7):

28 https://www.state.gov/reports/2023-investment-climate-statements/maldives/

Pokhara

- The Environment and Natural Resource Protection Act lacks concessions for disadvantaged households and gender-responsive infrastructure.
- The Pokhara Metropolitan Education Regulation lacks inclusive WASH provisions, impacting safe and hygienic facilities for all students.
- The health policy overlooks the role of WASH in public health, necessitating the integration of inclusive WASH measures.
- Annual plans outline WASH and inclusion goals, but the budget allocation for WASH is low at 2%.
- There is a need to boost budget allocation to ensure equitable access and sustainability of WASH initiatives
- Amendments to the regulation should prioritize capacity-building and worker protection.
- The Solid Waste Management Regulation does not consider stakeholder capacity and sanitation worker safety

Hetauda

- Existing WASH related policies and laws in require a more comprehensive and inclusive approach to WASH.
- The Water Resource Use Procedure needs expansion to address water quality, faecal sludge, and inclusive infrastructure.
- The Sanitation Management Procedure should cover appropriate technology, financial assistance, and measures for underprivileged households.
- Efforts are underway to promote inclusivity, but the WASH budget allocation remains relatively low at 4.35% of the total budget.
- The proposed WASH Act should include provisions for support in underserved areas, concessions for disadvantaged households, and active participation of women and sexual minorities.
- Recommendations include the formulation of a dedicated WASH Act that explicitly recognizes fundamental rights to health services and safely managed drinking water and sanitation.

Fig 7: Opportunities for improving inclusivity in Pokhara/Hetauda

From a technical perspective, Bhutan's Guideline for Differently Abled Friendly Construction 2017 provides instructions on how to design accessible buildings, both new construction and retrofits. One chapter specifically addresses toilet and bathroom designs for people with disabilities.

However, a 2018 study by Bhutan's Ministry of Education revealed that many schoolgirls (45.9%) took "half-body baths" during their menses due to a lack of hot water and teachers advised parents to keep their differently abled daughters at home due to a lack of facilities at school.

Bangladesh was the only country to specifically mention language as a potential barrier to inclusion, which is true for many traditional media, but less so with the advent of the mobile phone and social media, which can facilitate reading of written materials and provide audio translations of a number of languages.

3.3.2 Women, children and the poor

The Maldives National Water and Sewerage Strategic Action Plan 2020-2025 has a target to *"ensure that at least 30% of all employees working in water and sewerage facilities on each island are women by 2023,"* but it is unclear how and whether they are on track to meet this goal.

Other countries including Nepal have attempted to impose "quotas" for women and disadvantaged groups in WASH, with varying success. Of Nepal's two project provinces, Bagmati Province's Act addresses inclusivity through stakeholder input, data disaggregation, and special provisions for diverse groups, while Gandaki Province's Act lacks recognition of these rights and inclusive provisions.

Bhutan's current policies recognise the importance of gender balance in WASH but does not provide any specific strategies for increasing their participation in planning, decision making, implementation, and maintenance of facilities; *"women in Bhutan are burdened with unpaid domestic care work, including tasks related to household water and WASH, yet they are underrepresented in decision-making platforms."*

The most striking gap reported was in Khyber Pakhtunkhwa, Pakistan, in relation to the theoretically aspirational 2006 National Drinking Water Policy. Policy objectives include inclusive planning, particularly for women who bear the bulk of household water responsibilities, quotas for employment in the Environmental Protection Agency and Tehsil Municipal Administrations, gender sensitisation training and ensuring water within 0.5km. Further the National Drinking Water Policy includes a gender strategy to encourage women *"to take part in decision-making at the district, tehsil and union council tiers…special efforts to recruit women in TMAs, EPA, and other relevant agencies to ensure that the needs of women clients are addressed."* It is not clear to what extent

this has been implemented, however, there is no national financing or accountability for inclusion. In general, there seems no mechanism and little interest in public consultation, nor in accountability for service provision.

Although 'gender sensitisation' and mainstreaming is noted in the Khyber Pakhtunkhwa Drinking Water Policy, less than 1% of provincial budgets are allocated to training. Therefore, capacity building of any kind is usually limited to donor funded projects. Similarly, in Public Health Engineering Department and Tehsil Administrations; despite the abovementioned quota; women account for less than 1% of staff, although a trend of hiring women is growing in Water and Sanitation Service Companies. Khyber Pakhtunkhwa, Pakistan, also notes that the existing WASH agencies focus on hardware, with no capacity or staff to engage in social mobilisation, except where required by donor projects, who engage NGOs for these activities. At present women's roles remain restricted to "soft" project components due to social and cultural norms.

feminising finance

Various intersectionalities put women at financial disadvantages impacting their ability to address their WASH situation.[29] Some examples include:

- Gender specific responsibilities: Women often bear primary responsibility for water collection and household sanitation.
- Education: Social attitudes and water responsibilities can restrict girls' access to education limiting their financial management skills and knowledge.
- Recognition: Some countries do not provide women the right of autonomy; instead assigning it to fathers, brothers or husbands. This affects their right to vote, open bank accounts, make decisions, travel freely or access reproductive health services. Lack of financial independence leaves them vulnerable following divorce or widowhood.
- Employment: Social attitudes and household responsibilities can limit their economic opportunities, and are often restricted to health, social care or domestic work. Coupled with the fact that women get paid less for the same work as men, this curbs their access to financial resources, impacting their ability to invest in WASH.
- Class, Race and Ethnicity: Women from marginalised groups may face additional barriers due to systemic discrimination, limiting access to resources and opportunities to improve their WASH situation. This includes gaining employment and opening bank accounts.
- Ability/ disability: Women with disabilities may face additional barriers to work and financial services while also being most affected by inadequate WASH facilities.
- MH cultural norms: Even in urban areas where traditional norms are sometimes looser, restrictions and self-limiting behaviours can affect women's participation in work and community activities, including project planning and decision-making events. Poorer women and girls may lack access to sanitary pads and are prevented from participating by shame or embarrassment.
- Old age: In most countries, women tend to live longer than men, which makes them more vulnerable in old age; experiencing physical and financial access difficulties.
- Climate and disasters: Due to their cultural responsibility for household affairs, they are more affected by shocks. During the pandemic found themselves disproportionally carrying the burden of unpaid care and domestic work without a break, and with less access to water and MHM products than usual. Anecdotal evidence suggests increased domestic rape and violence as well as child marriage occurred in some countries during and following the pandemic, when access to family planning and contraceptive services was limited.

We can see that there are numerous ways in which women are more affected by WASH decisions than men. Therefore, it is essential that the impact on their lives be properly accounted for. Sensitisation for men and boys as well as finance product designers is essential.

WASH finance and projects which exacerbate inequality in services need to be identified and suspended.

Projects which require participants to make significant financial or time contributions, be able to travel freely, to read or do basic calculations may in fact be excluding many women, especially disabled women, and more insightful interventions are required.

Schemes which recognise the financial value of women's domestic work, as well as ensure their control over their finances, such as child care benefits or other social payments; should be explored

https://web-archive.oecd.org/2022-03-02/625734-2022-blended-finance-gender-equality.pdf

29 Reference from FANSA Pakistan Balochistan's report.

Balochistan's women's FGD highlighted the need to address the "specific needs of female-headed households, ensuring their active participation in decision-making processes" as well as interventions which consider the "unique health and hygiene needs of women, especially during menstruation".

Sri Lanka praised the Ministry of Education for the attention paid to health in primary schools to reinforce hygiene practices. Unfortunately, JMP school WASH data is not disaggregated, and we cannot see how students are faring.

Around 80% of Bangladesh's city households have sanitary toilets, while 80% of Pourashava households do not. Of these, up to 30% are shared by different families; up to 50 families in Sreemangal Pourashava; and open defecation is still practiced. One suggestion is to upgrade *"public toilets to ensure they are safely managed and hygienic, with features like proper ventilation, cleanliness, and accessibility for all, including people with disabilities"* and that organisations *"should create provisions to promote menstrual hygiene and its disposal management, including gender-responsive planning and implementation of WASH activities"* for shared facilities and institutional settings

3.3.3 Creating demand vs public accountably

As the full title of the Rising for Rights project states, "Strengthening Civil Society Network in South Asia to achieve SDG 6", the main activity and goal of the initiative is to build grass roots demand.

Demand: Bangladesh makes an interesting point about demand creation, that awareness-raising should start with "existing and newly recruited officials of the organizations. They should get proper training on SMS, FSM, and CWIS regularly."

Based on the FGDs there would be great demand for water, sanitation, solid waste and FSM services, however the lack of space and flooding risks make technical and managerial choices complex. Providing shared toilets for informal settlements would not meet the SDG basic service level. Residents note that new WASH infrastructure and service provision as well as refurbishment or new public housing would create job opportunities and skill development.

Already mentioned is the lack of demand for sewerage services in Pakistan due to lack of sanitation regulation. Conversely in Bhutan, local governments together with Ministry of Works and Human Settlement have identified the need to *"allocate resources for activities that create demand for sanitation services"* though whether and how this has actually happened is not detailed.

Bhutan's development partners are also involved in promoting sanitation and toilet construction, but mainly to reduce open defecation in rural areas. Bhutan states that government places emphasis *"on ensuring the participation and representation of marginalized and vulnerable communities in decision-making processes related to WASH. This includes tailoring programs to the specific needs and challenges faced by these groups, such as those living in remote areas or with limited resources. Stakeholder engagement mechanisms are designed to facilitate their inclusion and ensure that WASH policies and programs promote equity and social justice"* and civil society organisations often play a crucial role in implementing WASH projects for marginalised communities, mobilising resources, training, and facilitating community participation.

Bhutan notes that most households aspire to flush/pour-flush toilets, and previous programmes have tried to strengthen the sanitation supply chain, linking potential suppliers and customers. In Bhutan's context, large-scale marketing is not always appropriate, so local masons were trained to build improved toilets and health workers inform households on critical aspects of toilet design and construction. Easy access to affordable materials for durable toilet construction was considered an enabler, and the Forest Park Office has provided free timber for sanitation construction in some areas.

The main barriers to sewage connection mentioned by Sri Lanka are connection fees and the need to upgrade to flushed facility, although NWSDB plans to provide free or highly subsided connections to new housing areas.

Accountability: This could be for any number on issues; WASH service inclusion, service accountability, OHS for sanitation workers, sufficient budget allocation for asset sustainability, data collection for transparent decision making. In line with this objective, each country has developed a Detailed Implementation Plan and Advocacy Plan.

Bangladesh notes a number of gaps between existing legislation and its implementation, which means that the public are not aware of the services or standards they are entitled to (Fig 8);

- Bangladesh Water Act 2013, and Bangladesh Water Rules 2018 are very good regulatory tools to establish water governance in the country, but people are not aware of them.
- The Pro-Poor Strategy for the Water and Sanitation Sector in Bangladesh 2020 protects the rights of marginalized people. This document is also not well circulated, and its implementation is limited.
- The Bangladesh National Building Code 2020, is a guideline for constructing and maintaining buildings, including provisions for safe water supply and sanitation facilities. But it is not enforced.
- The National Adaptation Plan of Bangladesh 2023-2050 highlights the importance of climate change adaptation in the water supply and sanitation sectors. It emphasizes the need to address climate risks and build resilience in infrastructure planning and development. But people are not aware of this valuable document.
- Strategies and Technical Guidelines for Climate-Resilient Water Supply and Sanitation Services for Pourashavas in Bangladesh 2020 provides strategies and technical guidelines for improving water supply and sanitation services but many Pourashava officials and citizens are unaware of it.

Fig 8: Unimplemented legislation in Bangladesh

None of the country reports gave an example of successful accountability in action. There is a risk that top-down accountability measures will only address issues perceived by existing majorities and decision makers. For example, Khyber Pakhtunkhwa, Pakistan, notes the traditional accountability between senior and junior civil servants, but not to customers. Conversely key performance indicator (KPI) based monitoring and reporting has been introduced in all Water and Sanitation Service Companies.

In Bhutan local government is responsible for preparing and implementing Water Safety Plans, conducting review meetings at least twice a year to ensure safe drinking water supplies. ensure routine operation and maintenance of the drinking water supply systems, ensure quality construction and operation of the water supply schemes. Whether and how they are accountable is not detailed.

Bhutan recognises that there can be differences between what residents want and what governments are willing to invest in. Disparities can be addressed through public hearings to enable both sides to understand the constraints and minimize corruption opportunities.

It is not clear from the reports whether CSOs truly represent all minority and excluded groups,[30] i.e. whether in fact the CSOs themselves have minority and excluded groups as their representatives at meetings and discussions. It appears more effort is needed to actively identify these segments and encourage and facilitate their equal participation. As noted above, general references to 'marginalised groups' suggests that exactly who they are remains unknown in many cases.

The need for transparent decision making was also noted in Balochistan, Pakistan,with regard to fund allocation and pricing. Agencies need to be held accountable for maintaining water and sanitation infrastructure, but communities also have to take responsibility not to waste water, but to actively conserve it. One FANSA suggestion was implementation of *"robust monitoring and evaluation mechanisms involving the community to ensure the effectiveness and sustainability of WASH interventions."*

Along these lines FANSA Nepal suggests provisions for participatory monitoring of health and sanitation be initiated, "engaging local communities, including women and marginalized groups, in the monitoring and evaluation processes to ensure accountability, transparency, and effective implementation of health and sanitation initiatives."

Therefore, in addition to supporting government agencies to define regulations and enforce them, a possible FANSA activity would be identification and sharing of existing social-auditing, mutual-accountability[31] and other rights best practices, including lessons learnt from the other BMGF project countries.

3.3.4 Mobilising youth and social media

Bhutan highlighted the opportunity to energise WASH advocacy and accountability through use of youth groups; "young people are not just passive recipients; they are also agents of change. They possess unique voices and needs that should be considered during national participatory processes. They are active in political and digital spaces, acting as pressure groups, and are increasingly recognized as innovators and entrepreneurs.

30 https://rwsn.blog/2022/12/08/a-sit-with-euphresia-on-water-and-diversity-in-its-leadership/
31 https://www.sanitationandwaterforall.org/about/our-work/mutual-accountability-mechanism

Importantly, they are the future leaders and custodians of the WASH sector, and they have a right to be engaged in critical issues they will inherit."

Bhutan annually recognises the local governments who achieve/ maintain 100% sanitation coverage on World Toilet Day (19 November).

The Maldives and Bangladesh also mention use of social media in addition to traditional media, but no specific activities are noted at this time. Bangladesh mentions the potential of Gambhira, a popular type of Bengali song and dance, in the Rajshahi region as well the role of *"youth groups and social influencers to actively participate in sanitation programs and advocate for improved practices."*

The ability to photograph or video unacceptable service levels or service provider behaviour is already widespread in society including among marginalised groups and enables them to participate on a relatively equal footing. Exposing service failures can embarrass providers into accepting responsibility, but clearly there are also potential personal and organisational risks of using 'naming and shaming' tactics. Social media can be a powerful tool for leveraging change, so long as it is used judiciously. The role of "influencer" has yet to be mainstreamed in most WASH organisations.[32]

3.3.5 Informal settlements

Nepal reports considerable progress in the national WASH situation and both project areas have over 60% of households with water available on the premises and 76%+ for septic tank sanitation. However, the field assessment revealed that *"water supply coverage at informal settlements in Pokhara and Hetauda is of dire concern",* with 'coverage' figures not reflecting water quality and accessibility service levels, nor unsafe FSM.

If local governments have plans to relocate urban slum dwellers, as suggested in FANSA Sri Lanka's report, investment in infrastructure may not be considered a good use of funds.

However, 40% of Columbo's population lives in informal settlements and we should assume that any urban space will, in time, once again be inhabited, if in a more formal manner. Therefore, investment in water and sanitation, if flexibly designed with the future in mind, can still reap benefits. If informal residents continue to share facilities, the 'basic' sanitation service level will not be reached.

Assisting slum dwellers to formalise land ownership could make household spending more attractive.

Bangladesh's project areas include informal settlements where water supply, sanitation, drainage, solid waste and faecal sludge management were all noted as requiring attention. While formal residential areas are supplied with water through large networked systems, Pourashava, households do not have piped connections instead relying on *"tube wells, ponds, or motor pumps"*. Gaibandha residents note that public toilets in different locations fill up at different rates, *"west side of the station and the front side of Circuit House"* and that public facilities are not women, children, elderly, or disabled-friendly. Further, cleanliness problems add to accessibility issues, but in any case, the high sharing rate puts all slum users below the basic sanitation service level.

3.4 Technical

3.4.1 HR: capacity and budget sufficiency

Many of the country reports alluded to both technical and managerial/ leadership capacity issues, not just in government agencies, but also in civil society and the private sector. The separation of technical and managerial capacity may allow different institutions to focus on their core strengths. As seen in Sri Lanka, NWSDB provides technical support to a range of organisations, however municipal and urban councils as well as community organisations which manage small water supply schemes lack both sufficient and technical staff. Sri Lanka notes that the current global financial downturn prevents work on new infrastructure, but may provide an opportunity for NWSDB to support capacity building of other organisations, particularly local government.

32 https://simavi.nl/en/news-and-stories/from-volunteer-to-wash-influencer-in-nepal-the-story-of-laxmi-pun-magar

Asset management issues are raised by FANSA Maldives, but it is unclear how they will be addressed other than through professional development of staff, at workforce and management level.

As noted earlier, a number of Water and Sanitation Service Companies have been established in Khyber Pakhtunkhwa, Pakistan, with World Bank support to operate services in urban areas, transferring responsibility from Tehsil Municipal Administrations. However, the remaining 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%), resulting in annual financial losses which have to be subsidised by provincial authorities. Even Khyber Pakhtunkhwa's Public Health Engineering Division has limited success in operation and maintenance of the few schemes it manages. This calls into question the design of such schemes, which may not take into account ease of maintenance, replacement of parts, cleaning, etc. If Public Health Engineering Division is not required to maintain the systems it designs, it may not include redundancy or maintenance access nor ensure quality of materials and workmanship. However, Balochistan PHED and others recognise their limited capacity to sustain older infrastructure and highlight finance constraints as the main bottleneck.

The issue of policy implementation capacity has already been mentioned in Pakistans' context, and is also mentioned by Bhutan. Bhutan's Ministry of Health is responsible for building capacity and supporting local agencies to plan, budget, monitor, and implement sanitation and hygiene initiatives. They train and mobilise health workers to promote sanitation and hygiene practices, provide technical support to health assistants, village health workers, local engineering sections, and contractors involved in construction and maintenance of toilets including masons, plumbers and carpenters

The Desuung National Service Water Project volunteers can receive training and technical experience in construction of different types of water projects, although design and supervision is mostly by the army. However much of the work is manual and the programme is voluntary although a stipend[33] is said to be provided for some projects. However, it is unclear whether water projects under the Desuung scheme are selected from existing local administration annual plans, where budget for materials comes from, to whom schemes are handed over for management and how they are integrated into existing local government O&M responsibilities for sustained service.

The situation is Bangladesh is unclear. Although some city authorities believe they have enough staff, the scope of public services is extremely limited, often lacking safe SWM or FSM. Even in settlements which provide basic collecting and conveyancing of SW there seems to be a lack of manpower, skills and suitable transport. Considering the dire FSM situation, there is scope for a much bigger workforce, possibly providing employment for informal residents as well as improving the conditions of sanitation workers by minimising manual emptying.

Where space is at a premium, and residents lack rights to develop infrastructure, container-based sanitation solutions may be more appropriate, although it may be more easily adopted by "wipers" than "washers".[34]

3.4.2 Operation and management

Few reports mention specific solutions for financially sustainable O&M. While Maldives charges no tariff for wastewater and Pakistan mentions unrealistically low water tariffs, due to public and political agitation when attempts are made to increase tariffs to more realistic levels. Pro-poor pricing systems are not in place. FANSA Sri Lanka reports protests introduction of a Water Services Reform Bill due to concerns about rates and instead suggests that sewage connections should be free. FANSA Nepal reports that health and sanitation financial and technical support is made available to economically disadvantaged settlements and marginalised regions and proposes that free water provision for impoverished households.

Some sanitation projects in Bhutan subsidise timber for construction, however Bhutan appears to have recognised the issue of sustaining infrastructure and local governments are charged with developing *"mechanisms to promote community ownership of water supply system."*

Nepal's National WASH Policy also addresses the 'ownership' issue by requiring beneficiaries to contribute up to 5% of project costs, though these types of requirements are unlikely to ensure sustainability since they do

33 With respect to CWIS it is not clear what % of these projects serve urban areas.
The minimum wage level in Bhutan has not been updated since 2014, but though the stipends exceed the minimum wage they are below market rate and are not possible to live on in urban areas. The main benefit for participants is "skilling" which the programme says will make them more engaged members of society. However the scheme does not accept people with disabilities or health issues, requires minimum Class X certificates and "security clearance" thereby exacerbating existing inequalities to training and employment opportunities.
In addition to army personnel, existing local authority staff are involved in technical aspects, presumably in addition to their existing planned annual works.

34 https://cbsa.global/about-cbs

not address technical or managerial capacity, nor design or construction quality. Although time consuming, and requiring specialist skills, sustained services in informal areas need to take account of beneficiaries' ability to raise cash or take time off to contribute labour.

Clearly tensions exist for different populations segments, and yet market research appears to be something which the WASH sector still has not fully embraced. Research indicates that convenience was a driver for household water connections in Ghana and India.[35] This is evidenced by the jumble of hoses filling household water tanks from many public taps across Asia. CWIS requires countries to recognise that there is a willingness to pay for services, however investigation is needed to identify exactly what households aspire to.

Facilitating low-income households to save for water and sanitation, providing WASH credit, interest-free loans or alternative payment mechanisms may encourage them to invest. Hetauda Drinking Water Management Board's plans to evaluate the effectiveness of the free drinking water is pertinent.

Sri Lanka mentions that some small scale semi-urban water supply schemes are managed by user committees, but others by local authorities, but no mention is made of tariffs.

Maldives notes that although tariffs are supposed to be collected for piped water supplies, no tariff is charged for the two STPs,[36] neither of which are functional, leading to complaints from nearby residents.

In Khyber Pakhtunkhwa, Pakistan, although PHED construct schemes, operation and maintenance in peri-urban areas is by the Tehsil Municipal Administrations. Municipal Administration capacity is limited and although they charge tariffs, nearly all are operating at a loss, requiring significant subsidies from province level. Tariffs are unrealistically low and there is no incentive or accountability for service providers to recover costs, instead relying on provincial grants to subsidise system operation.

Balochistan, Pakistan, noted the "need for a phased implementation of the tariff system for agricultural wells, considering the economic realities of local farmers. Consider offering support and incentives for farmers to adopt water-efficient technologies before full enforcement of the tariff-based system" together with financial rewards for "farmers who adopt sustainable and water-efficient agricultural practices. This can include incentives for drip irrigation, soil moisture management, and other technologies that reduce water consumption while maintaining productivity."

3.4.3 Faecal sludge management

FSM is reported in all countries to be a challenge, but details of the current situation and specific plans were not always clearly stated.

Sri Lanka notes a number of treatment plants, including decentralised facilities (DEWATS) which are operated either by government agencies, NWSDB, Board Of Industry, or contracted to the private sector. In some cases, these plants release partially treated effluent to centralised systems. Details of different tariff systems were not shared nor the functionality of these facilities. In fact the Water Services Reform Policy was blocked due to public protest on issues including tariffs. Thus it appears that the human right to water and sanitation has not been balanced against citizens' responsibilities.[37]

Sri Lanka and Maldives mention either direct or partially treated discharge through sea outfalls. Maldives also notes that STPs in the project area are not operational. Odour issues are noted in all the islands new pumping stations from time to time during the year, by nearby residents. Due to ground water pollution arising from inadequate on site tanks sanitation systems and sea water intrusion, Maldives has set the goal of connecting all households with piped sewerage and has reached 48% coverage to date. If sea level rises or storm events become more frequent, untreated discharge to the ocean may also need to end. They also note that where STPs are functioning, effluent is not being used for any purpose, therefore use for groundwater recharge may be worthwhile investigating, particularly is solar energy is available for pumping.

Uncontrolled discharge of sludge by both government and private sector is mentioned by Sri Lanka. As we have seen, Bangaldesh has a number of FSM acts and policies but they are not being implemented and note that the 2023 local government faecal sludge and sanitation management guideline is not very easy to use. Pourashavas

35 https://citywideinclusivesanitation.com/debunking-urban-sanitation-myths/, https://www.engineeringforchange.org/news/nine-myths-dispel-global-water-sanitation-hygiene/
36 One rotary biological contactors, one aeration.
37 https://www.frontiersin.org/journals/water/articles/10.3389/frwa.2022.885193/full

will need training and experienced manpower to implement it. Under existing legislation city corporations can impose penalise households connecting toilets to public drains and they identified this as a priority activity, however households will require solutions for pit emptying before such initiatives are introduced.

In the meantime, ~30-40% of households have on-site sanitation which sweepers empty manually at night and dispose wherever they can, *"leading to the reintroduction of faecal matter into the environment".* At present Pourashavas have no regulations or facilities for FSM treatment, instead there is a local directive *"to allocate land for faecal sludge treatment and disposal",* i.e. *"digging pits or trenches in the ground and covering them* ☐ FANSA Bangladesh notes the risks to households of having single pits and suggests *"a program to gradually convert single-pit toilets to off-set twin-pit toilets"* which would allow the contents of the full pit to become less potent while the second pit is in use. If not overloaded, the pit can be emptied without hiring sanitation workers, saving money. Further, the material can be used for kitchen gardens if households have space. However twin pits require land and water for clear flushing.[38]

Bangladesh also identifies an urgent need to "survey sanitation to stop open defecation, a massive awareness program, the disposal of faecal sludge in a safe mode, and at least a septic tank." Barisal City Corporation lacks sludge management facilities, "leading to pollution of the Kirtonkhola River."

Despite the aspirational but unimplemented National Drinking Water Policy, Khyber Pakhtunkhwa reports that only *"2 surface water treatment plants and 1 wastewater treatment plant were developed in large cities of Pakistan." "None of the city in Khyber Pakhtunkhwa province has WWTP hence entire municipal effluent is discharged into water bodies including rivers and used for agriculture farming."*

Notwithstanding the two ADB funded activated sludge treatment plants which are currently under construction, low tech approaches seem best suited to urban Pakistan, where capacity and interest in O&M is currently low; i.e. grey water reuse, settled and simplified sewerage systems and storm water infiltration.

Balochistan, Pakistan, notes that there are two wastewater treatment plants in Quetta whose effluent has been used for agriculture purposes. However, farmers have recently stopped using water supplied through these treatment plants due to the low quality which is affecting agricultural yield. Further exploration of technically appropriate solutions is needed, accounting for terrain, climate and optimising reuse.

3.4.4 Solid Waste Management

Sri Lanka mentioned numerous times the negative impact of garbage on sanitation and drainage, leading to blockages and flooding. The women's FGD in Balochistan, Pakistan, also highlighted the issue of lack of solid waste management systems and household behaviour, which block drains and lead to environmental issues.

Nepal shares that although Sub-metropolitan Sanitation Management Procedures mandate waste segregation at the source into organic and inorganic, *"suitable policies and campaigns… are yet to be developed by the metropolitan authorities."* Even so, Hetauda plans to launch the "Clean Hetauda, Healthy Hetauda" campaign, *"focused on reducing solid waste at its source and …which will involve the development of an integrated solid waste management program."*

Bangladesh notes that in Sreemangal Paurashva, Moulovibazar there are no *"government or organizational initiatives on waste management, and previous attempts were postponed due to land-related disputes."* This is not a problem exclusive to FANSA project countries and requires governments to make difficult decisions. However, lack of solid waste collection, disposal or recycling system leads to "*open storage and environmental pollution.*"

3.4.5 Schools, healthcare and public facilities

The SDGs and CWIS highlight the need to move beyond the focus on households, towards institutional and public services.

Schools: Interestingly Pokhara Metropolitan Education Regulation's "is limited to student access to school toilets only. According to these standards, school toilets should align with the students' age, provide separate

38 https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-017-4412-7

facilities for male and female students, and consistently stock essentials such as soap, towels, water, toilet paper, and regular hygiene materials to ensure proper sanitation. Unfortunately, there are no specific standards established regarding the supply of high-quality drinking water within school premises."

Bhutan's National Education Policy, requires school infrastructure, including monastic education institutions to ensure *"accessibility, safety… taking into account age, gender, disability, and climatic conditions."* Additionally, the Ministry of Works and Human Settlement, in partnership with other agencies, has committed to improve WASH services in Youth Centres across the country.

Sri Lanka notes the need to focus on "public toilets, provision of sanitation facilities for marginalized groups and sanitation improvements in schools."

HCFs: Nepal highlighted issues with the Metropolitan and Sub-Metropolitan Health policies. In both cities the definition of sanitation *"is narrowly confined to environmental cleanliness"* with *"a stark absence of any provisions related to WASH. This oversight neglects the crucial connection between WASH and public health within the policy."* The Nepal report lists seven areas for improvement, following proper investigation of disaggregated data (Fig 9):

Fig 9: Areas not address by Pokhara city health policy

i. Accessible facilities for sick, disabled
ii. Gender-responsive facilities, including MHM
iii. Hygiene promotion
iv. Equitable provision for vulnerable populations
v. Accessibility for children and elderly
vi. Emergency preparedness infrastructure and systems
vii. Data collection to identify disparities and priorities

However, Pokhara, Nepal, which is a major tourist destination and transit point; also has at least 15 private hospitals as well as a military hospital, and numerous small clinics. It is unclear what infrastructure and O&M guidelines apply to these institutions and who regulates them.

Bhutan mentions that healthcare facility sanitation is a significant concern and to *"establish national policies and standards for healthcare facility WASH and coordina*[tion]*".*

A 2016 report on sanitation and hygiene in healthcare facilities in Bhutan indicated that ~42% of 28 hospitals surveyed reported E.coli/ faecal contamination, and approximately 5% of toilets were reported as non-functional. In addition to patient needs, infection concerns arise from poor healthcare-provider hygiene, specifically handwashing.

The Balochistan Water Sector Strategy developed by a local NGO understands *"water as a finite resource"* and recognises *"the pivotal role of water in the economic and health sectors and its impact on poverty levels"* and thus this comprehensive water strategy aims to address these multifaceted challenges.

Bangladesh mentions that BarisalCity and almost none of the Pourashava's have clinical waste management systems which causes *"huge problem for the local people"*.

Public facilities: Sreemangal Pourashava in Bangladesh notes that there are six public toilets, but none are safely managed and there is no system for safe waste disposal. Only one driver is employed for city "conservancy services". Less than 10% of markets have toilets, and there are no women's toilets. However city authorities had different perceptions of the state of public facilities and waste management services compared to users in Barisal and Gaibandha, and the government does not regulate or support sanitation workers who are engaged directly by households.

The Maldives note lack of public toilets and accessible toilets including in healthcare facilities and tourist areas and lack of MHM products and facilities at travel hubs.

Bhutan's Local Governments and the Tourism Council are responsible *"for ensuring that highways have adequate sanitation and hygiene facilities"* although specific details of how facilities are managed are not shared. It is essential to also collect WASH data from other institutions, including the armed forces, monastic residential and educational facilities.

3.4.6 Water and effluent quality, R&D

Water quality:
Bhutan's hospitals and health units provide lab services for urban water quality testing in accordance with the national Drinking Water Quality Standard, including pre-feasibility water quality testing for new schemes. They also provide advocacy and awareness on safe water handling and storage for consumers.

Pakistan notes that national water quality standards have existed since 2008 and the Pakistan Council of Research in Water Resources initiated a nationwide water quality monitoring program in 2002 focusing on 24 major cities. However quality is the responsibility of decentralised water supply operators, and there is no institution for water quality measurement in Khyber Pakhtunkhwa. Installation of decentralised water treatment plants, mostly reverse osmosis, is the *"quickest political"* solution without attention to their sustained operation and maintenance. Furthermore, the lack of regulation means that neither service providers nor residents abide by pollution laws, particularly effluent standards. In Balochistan, the risk of contamination of water from improved sources was recognised, including during handling and storage as well as from pollution and leakage during conveyance.

Nepal also highlights that although a high percentage of the population is served by piped systems there is a lack of attention to water quality, with no data for the proportion of wastewater safely treated or water bodies with good ambient water quality. In response, Hetauda City plans a public awareness programme together with the local Drinking Water Management Board aimed at effective water quality testing and treatment.

No country mentioned the issue of arsenic intrusion, though it is found in parts of Bangladesh, India, Nepal and Pakistan. This may be an area for technical and managerial knowledge sharing.

R&D:
Some countries referred to the need for technical research, few shared specifics, for example Balochistan notes need for water conservation such as efficient irrigation technology.

Similarly, Bhutan's Ministry of Works and Human Settlement together with local governments are supposed to investigate and implement treatment systems *"suitable for the local context and can withstand disasters and climate changes"* with the aim of minimising environmental impacts of wastewater management. An example of a small technology intervention is the ongoing upgrade all unimproved school toilets through installation of SaTo Pans[39] and for new school toilets to use heavy duty materials and designs.

Interestingly, the Maldives and Sri Lanka, which employ desalination plants in some non-project areas, did not mention any plans to expand their use, presumably due to costs. Issues of both low and high ground water tables, including coastal and marshy areas, were noted to have an impact on water supply in Pakistan and sanitation in Sri Lanka respectively. Clearly these require technical in addition to management solutions. Due to climate change and sea level rise risks, these may be areas for sharing experiences between countries.

Areas suffering from dry seasons but having high humidity may wish to explore fog and humidity water-capture technologies which have been trialled elsewhere.[40]

3.4.7 Modern BCC- Media for WASH

Traditional use of media for WASH was often limited to pamphlets or radio programmes, which needed translation into local languages. The advent of the mobile phones provides us with almost unlimited methods to share behaviour change communication (BCC) messages, raising awareness, sharing technical knowledge and advocacy. Practical demonstrations of how to design and build septic tanks can now be disseminated endlessly in a video to friends and family.

FANSA Bangladesh notes the provisions for preparation of publicity media by various agencies on health issues. Maldives also identifies the media as playing "a vital role" but limits itself to traditional media, newspaper, radio and TV.

39 https://sato.lixil.com/
40 https://www.frontiersin.org/journals/water/articles/10.3389/frwa.2021.675269/full, https://news.climate.columbia.edu/2011/03/07/the-fog-collectors-harvesting-water-from-thin-air/, https://canadiangeographic.ca/articles/the-canadian-innovation-that-pulls-drinking-water-out-of-thin-air/, https://www.e3s-conferences.org/articles/e3sconf/pdf/2017/11/e3sconf_wrec2017_03001.pdf

3.5 Legal

violation fines ohs inclusive
regulations non-discriminatory penalties

3.5.1 Sanitation worker health and safety

Although most countries principally refer to the use of mechanised vacuum tankers for emptying, Sri Lanka, Nepal and Pakistan mention issues relating to sanitation worker safety; lack of PPE or employers failing to provide health surveillance. Only Nepal specifically mentioned sanitation workers as a marginalised group though it is a well-documented problem across south Asia and inferred by Bangladesh.

Bangladesh reports manual emptying using buckets, though some households in the Pourashava hire vacuum trucks. It is not clear if this choice is because manual emptying is cheaper or because the pits are not accessible by truck. Despite the essential service they provide FANSA Bangladesh states that they are poorly paid and suggested the creation of sanitation worker cooperatives.

Bangladesh also notes that City Corporations are responsible for ensuring that operations *"are conducted hygienically without posing any risks to the health and safety of the emptier, the public, or the environment."* In this regard they identify the need for *"training and support to o desludging operators on health and safety measures, proper handling of sludge, and environmental protection measures."* Use of twin-pits as mentioned elsewhere, would reduce the risk of emptying risks.

In Pakistan the National Drinking Water Policy is *"silent on mandates safeguarding of consumers, communities, workers, from public health risk, occupational hazards, operational and environment risk, right to safe water and safely managed sanitation."*

Specific initiatives for sanitation workers beyond OHS issues include requiring employers to provide insurance as well as supporting health-cost savings schemes.

3.5.2 Water extraction regulation and the tanker mafia

Balochistan, Pakistan, reports an issue of unregulated private sector water supply services, leading to service inequalities and threatening water security. According to the Water and Sanitation Agency, Quetta city demand is 60m gallons of water daily, while only receiving 35m gallons. The current water supply relies on 450-500 tube wells, but their output has significantly decreased, with an alarming 300m drop in the underground water level, now at 600 BGL. In addition to illegal tube-wells the so-called "Tanker Mafia" operates around 2,000 unlicenced tube wells and charge *"steep prices"* ranging from PKR 5 to 10/ litre (<USD 0.05) for untested and untreated water.

Here we see the consequence of weak regulatory systems which are exploited by the private sector causing service inequalities, as well as negative health and environmental consequences. It appears all the necessary legislation is already in place, but that the responsible agencies are unable or unwilling to address the issue. This requires coordination between agencies to draft robust policies, separating service providers from regulators.

Notwithstanding this particular example, Khyber Pakhtunkhwa, Pakistan, also estimates that 85% of domestic use is discharged directly back into the environment without treatment, where it returns to natural water bodies and is extracted for agriculture. Not surprisingly then, Khyber Pakhtunkhwa reports high incidence of diarrhoea, and 49% child stunting due to poor nutrition and WASH behaviours as well as drinking water contamination and waterborne diseases. However, they also report low demand for sludge emptying services, since public drains are being used as sewers. (Table 5)

	Abbottabad	Kohat	Khyber Pakhtunkhwa	Peshawar	Swat	Total
Population under WSSCs Jurisdiction (m)	1.4	1.2	2.7	4.7	1.9	11.9
Ground water extracted (MGD)	3.5	4.4	2.3	52	6.2	68.5
Total Wastewater Generated in the city (MGD)	2.9	3.7	1.9	44	5.2	57.7
Sewerage Connections (No.)	-	-	-	77500	-	77500

Table 5: Khyber Pakhtunkhwa,FANSA Pakistan, estimated wastewater production

Under the ADB Khyber Pakhtunkhwa Cities Improvement Project two activated sludge treatment plants are under construction, in Khyber Pakhtunkhwa (3 MGD) and Kohat (5 MGD), with expected completion by 2026, as well as at least one sanitary landfill site.

3.6 Environmental

3.6.1 WASH sector pollution, regulation and enforcement[41]

Pollution: Some countries mentioned existing national environmental pollution regulations but there were legislative gaps at local level, particularly for identifying offenders, enforcing regulations and imposing fines or other measures.

Bangladesh and Balochistan, Pakistan, noted the issue of solid waste blocking drains problems as well as continued open defecation by a small pecentage of the population. Maldives noted similar problems, together with pollution by unmanaged onsite sanitation.

Both Bangladesh and Nepal report uncontrolled dumping of sewage waste, and the negative effects on health and the environment. Pakistan reports water pollution arising due to lack of, or dysfunctional wastewater treatment facilities. Further, there is no mechanism requiring housing developments or houses to manage their sewage, therefore most connect to surface water drains.

In Bhutan, in violation of the Water and Sanitation Rules grey water is often discharged directly into drains without treatment, there is a lack of guidelines and standards for proper management, safe transport, or disposal of sludge which leads to improper disposal. A shortage of suitable sites for treatment plants, lack of funding and limited human resources pose challenges to safe urban wastewater management. In 2019 only 8 out of 35 towns in Bhutan had public sewerage systems, risking septic tank effluent entering the environment.

Licences & permits: As already shared (Fig 8), the Bangladesh National Building Code 2020 provides guidelines for safe water supply and sanitation facilities in new buildings, but though it should be used to asses compliance it remains un-implemented in many towns. Bhutan and Sri Lanka also note the responsibility of local authorities to issue building permits for new developments including water and sanitation aspects.

Similarly, Bangladesh shared that building codes were not enforced. Nepal notes that although all new house and public buildings require septic tanks and the issuance of a construction completion certificate, procedures lacks septic tank design rules. Therefore, many households may believe they have 'septic tanks' when they actually only have a pit, that provides no treatment. This is an issue for meeting the SDGs since pit/ tank interiors are not inspected by enumerators.

Similarly, over 80% of Bhutan's urban population uses on-site sanitation systems, *"but more than 40% of these systems lack a soak-pit for safe wastewater disposal."* Bhutan's rules further emphasize the importance of accessible facilities adhering to standard codes of good practice, however, there seems to be issues in all countries with oversight and compliance of construction work, resulting in poorly managed sewage.

In addition, failure to plan or follow building permit conditions leads to pits being inaccessible to vacuum tankers, as mentioned by Pakistan and Sri Lanka. How such pits were being emptied was not mentioned and maybe other countries could share their solutions. FANSA Balochistan (FANSA Pakistan) made the specific recommendation for clear access to be maintained to sanitation facilities.

In addition to the physical barrier, Sri Lanka mentioned a national shortage of vacuum tankers, which has led to private service providers charging much higher rates than government providers, coupled with illegal dumping. We see that while private sector can fill demand gaps, regulation and enforcement are also necessary to ensure equality of services. Relying solely on large, mechanised emptying clearly reduces risks to sanitation workers, but smaller emptying solutions also need to be investigated.

41 This issue overlaps with private sector and legal areas of the PESTLE analysis framework.

Nepal notes that Hetauda's Sub-Metropolitan Water Resource Procedure *"is limited to the issuance of licenses to individuals or organisations seeking to utilize water resources"* and does not include quality of drinking water, faecal sludge, sewerage or greywater management, although the Sub-metropolitan Sanitation Management Procedure *"mandates the voluntary cleaning of water sources by the community every Saturday"*!

Pakistan and Sri Lanka noted the requirement for environmental impact assessment and pollution monitoring for water sector projects.

For Sri Lanka, the issue of environmental pollution seems to be the chosen focus of immediate concern. They identified the following non-compliance with existing legislation:

- Construction of new buildings neglecting water and sanitation requirements required under Urban Development Authority Act 1978.
- Non-compliance with environmental standards and licences of wastewater, especially from industry,
- Risk to water resources from riverbanks and river bed mining.
- Non-compliance with Department of Coast Conservation and Coastal Resource Management environmental standards of wastewater released in coastal areas
- Open dumping of sewage
- Poor monitoring of insanitary activities by local authorities, often due to insufficient HR capacity
- Poor implementation of laws and by-laws by local authorities regarding wastewater discharge
- Consider climate change in new designs for water intakes and sewerage systems

Fig 10: Sri Lanka legislative non-compliance and coherence

Regulation & enforcement: The issue of regulation is reported in all countries to varying extents, the main issue being the lack of government capacity to undertake the role. Where service provision is outsourced, it is essential that government agencies are motivated to ensure service standards and violations, as noted with Pakistan's Water Mafia problem.

It is generally accepted that the same agency cannot hold both implementation and regulatory roles. Although it is usual for government to take responsibility for regulation, there are also opportunities to contract monitoring roles to the private sector. Bangladesh notes that the *"City Corporation has the option to engage the private sector or non-government sector through outsourcing to conduct inspections or surveys aimed at identifying illegal sewage, wastewater, or refuse disposal practices."*

The Maldives report notes that private operators manage STPs in the project areas, although both are non-functional and no tariffs are charged. *"Companies responsible for providing WASH services, including water supply, sanitation facilities, and hygiene promotion need to be involved in the advocacy plan",* especially if tariffs are to be introduced for financially sustainable services.

Nepal also notes problems arising from the failure of the Drinking Water Supply and Sewerage Management Department to separate the two roles.

3.6.2 Solar energy

Pakistan has plans for "solarisation" of existing and new water supply schemes, but it is not entirely clear what this means, while the Maldives aims for 30% of energy for "water and sewerage facilities across the Maldives to be met with renewable energy by 2023." In both cases it is not entirely clear what is driving this intervention; reduction of carbon footprints or to address mains supply interruptions during disasters.

3.6.3 Rain water &reduce, reuse, recycling

Despite the obvious need to capture as much precipitation as possible, only Bhutan and Maldives[42] explicitly mention plans to increase rain water harvesting, although they both note the difficulties of sufficient storage. Some Maldives islands face *"water shortages during the dry season"* and there is ongoing work to increase harvesting and storage as a climate-resilience intervention.

42 India's report mentions RWH extensively, but in village contexts.

Sri Lanka mentions that rainwater is a current domestic source but does not identify any plans. Bangladesh mentions rainwater harvesting together with constructed wetlands as potential climate change resilience responses, but the extent of their use at the present is unclear.

Khyber Pakhtunkhwa's report makes general mention of household rainwater harvesting while the Balochistan report mentions it together with flood/ spate water harvesting as an irrigation water source although it could also be used for ground water recharge.

One of the Bangladesh interviewees mentioned the need to apply the Suez Approach to modern SWM and FSM, i.e. applying a "circular economy" mindset; such as Doughnut Economics; to water and waste.

3.6.4 Plastic waste

The Maldives has a national policy target to *"phase out the use of single-use bottled water in at least 40% of households by 2023".* It is unclear how and whether this target has been achieved, and Balochistan similarly report that *"polyethylene bags blocks drains, exacerbating the sanitation crisis".* How they plan to address this is not detailed but clearly it would provide SWM benefits for other countries as well.

Although in line Maldives' goal to provide universal piped supply and small-bore sewerage, this presumes that the piped supply is reliable and temporary storage at household level is not required. The country report already notes the lack of storage space and that *"storage capacity in Male' is only sufficient for 24 hours"* though other islands have 7 days' storage.

3.6.5 COVID

Bangladesh noted the influence of the COVID pandemic on government motivation to "ensure 24x7 safe drinking water, … improved water, sanitation, and hygiene conditions" as did the Maldives, who plan to "continue and expand hygiene awareness activities initiated during the COVID-19."

Similarly Bhutan notes a program to *"ensure 24x7 safe drinking water, coinciding with efforts to address the COVID-19 pandemic's demands for improved water, sanitation, and hygiene conditions."* In response, 25 inclusive handwashing facilities were built at bus terminals, markets, and taxi stations in partnership with non-governmental agencies in 10 districts.

However, Sri Lanka noted the global economic downturn that followed the pandemic, and its effect on donor funded WASH, both infrastructure and other activities.

3.6.6 Preparing for climate change and disasters

Some of the FANSA countries have already experienced climate related disasters, however the mention of climate and natural disaster policies and responsibilities in the country reports was relatively limited. Only Bangladesh and Maldives mentioned their National Adaptation Plans, although *"in 2022, unprecedented rainfall and flooding in Pakistan affected approximately 33 million people, with estimates of total damages exceeding USD14.9 billion and total economic losses reaching about USD15.2 billion"*[43] and slowing sanitation progress.

Bangladesh's National Adaptation Plan 2023-2050 highlights the importance of climate change adaptation in the water supply and sanitation sectors, to address climate risks and build resilience in infrastructure planning and development. Subsequently the Strategies and Technical Guidelines for Climate-Resilient Water Supply and Sanitation Services for Pourashavas was released in 2020 which provides strategies and technical guidelines for improving water supply and sanitation services. However there is little awareness of either document amongst officials or the public.

Even so, at household level, Bangladesh community members recognise "the impact of climate change on sanitation and suggested initiatives for resilience. They prioritized raising the height of safe toilets to avoid water pollution during floods or waterlogging during monsoons."

Balochistan, Pakistan, noted a lack of flexibility in the WASH sector and its systems despite the need to "continuously review and align project objectives with emerging challenges... foster a culture of adaptability and flexibility to ensure responsiveness to the dynamic contours of emerging challenges."

43 UN 2023, p71

Balochistan, Pakistan, also shares that investigation of groundwater recharge at *"all potential sites in the Quetta Valley" would only have a marginal impact on relieving the over extraction problem. "The short lifespan of civil engineering-based schemes, attributed to siltation, poses a challenge and hinders their contribution to the long-term sustainability of current abstraction levels. Nonetheless, experts argue for an increased focus on researching the effects of enhanced catchment management on recharge, possibly in tandem with additional investigations into engineering solutions."*

Thus there is an urgent need to treat and reuse urban wastewater for non-potable purposes, reducing the overall demand on freshwater sources. Decentralised treatment in Balochistan, Paksitan, may be able to recover 60,000 cubic feet of wastewater, which can be repurposed for non-potable use, such as toilet flushing.

Khyber Pakhtunkhwa's Approach to Total Sanitation leveraged flood response funding to address sanitation, enabling the MDG to be met, but there is still insufficient budget allocated to the sanitation sector, ~20%, and particularly to FSM.

Again, despite the aspirational but unimplemented National Drinking Water Policy, Khyber Pakhtunkhwa reports that *"neither the federal government nor the provincial governments has formulated* [water conservation, quality or surveillance] *policy, act or legislation."*

The Khyber Pakhtunkhwa Drinking Water Policy does not address climate resilience, ground water depletion, water scarcity, water metering or rainwater harvesting. The Khyber Pakhtunkhwa Environmental Protection Act 2014 includes activities and standards which are not aligned with climate resilience. There is a need to conduct a comprehensive climate-risk informed WASH assessment, aligning the various guidelines and standards.

Since WASH stakeholders do not currently have the capacity to fulfil climate resilience responsibilities, training in line with climate risk assessments will be required. Along these lines, the "Quetta Water Supply and Environmental Improvement Project" supported by ADB, "*aims to develop water resource management projects*" and strengthen water resource regulation through technical assistance.

The UN's assessed impact on GDP of a 1 in 100 year flood for Bangladesh is 60%, 26% for Pakistan and 21% for Bhutan. Nepal is included in the 20 countries with the lowest levels of human safety from water disasters, while Pakistan and Sri Lanka are among the 23 countries with critical levels of water security.[44]

In this regard, FANSA Nepal notes the failure of current health facilities to plan for impacts of climate of disaster on water supplies and sanitation, to protect service provision during critical times.[45] They recommend *"measures aimed at promoting water conservation, enhancing resilience, and adapting to the impacts of climate change, alongside the establishment of preparedness and response mechanisms."*

Unfortunately, Bhutan's current urban WASH legislation does not take climate change into account. Maintaining water sources and protecting catchment areas are amongst possible resilience and adaptive strategies acknowledging Bhutan's vulnerability to climate change. Floods and landslides pose a threat to WASH infrastructure, including sanitation systems, and impact the quality and availability of water for drinking and hygiene purposes.

Bhutan's Ministry of Home and Cultural Affairs is charged with WASH planning for emergency situations, together with assisting Local Governments with implementation through the Department of Local Governance. Lessons learnt from a donor funded disaster mitigation project in one district identified school interventions that can be carried out by schools themselves and those that require outside support. 11 activities were selected for immediate implementation, including the construction of hand-washing stations, installation of water storage tanks, and upgrading old pit/AP toilets coupled with sanitation education for students undertaken by a CSO.

Some project areas in Maldives, as a SIDS, as well as Sri Lanka and Bangladesh are coastal; affected by risks of saline intrusion, arsenic contamination, sea level rise as well as typhoon/ flooding. These geographical issues can only be addressed through a combination of technical, managerial and behavioural interventions. A holistic approach will be necessary to protect WASH services for these vulnerable populations.

The Maldives National Water and Sewerage Strategic Action Plan 2020-2025 targets include (Fig 11):

44 UN 2023
45 https://time.com/3838989/nepal-earthquake-hospitals/

- Target 5.1: Implement water resource conservation and management plans in all inhabited islands by 2023.
- Target 6.1: Identify and map flood-prone islands by 2021.
- Target 6.2: Develop and enforce design criteria and guidelines for flood mitigation by 2022.

Fig 11: Climate related targets from the Maldives National Water and Sewerage Strategic Action Plan

However, it is unclear how and whether these have been undertaken, and what plans there are to complete them. On a positive note, the Maldives has accessed climate-funding to *"continue promoting climate-resilient water supply and management."* An interesting idea is to engage lecturers and students at educational institutions to conduct CWIS related research into mitigating climate impact on WASH through community driven interventions, providing them with hands on experience.

the economic fallacy that inclusivity costs more

Historical (and some ongoing) responses to demands for physically accessible sanitation often argue that delivering WASH infrastructure is already a challenge, there is no budget and limited benefit in targeting such a small group.

Today we recognise that providing accessible WASH does not only serve those with disabilities, but the whole population.

Similarly, climate resilient infrastructure does not only provide benefits during disasters but for its entire, hopefully extended, lifetime.

Therefore, as for accessible sanitation; robust cost estimates and comparisons for various climate resilient solutions are needed to influence public decision making. WASH professionals need to get professional about evidence-based advocacy to garner political commitment!

CLEARING A PATH
FOR PEOPLE WITH SPECIAL NEEDS
CLEARS THE PATH FOR EVERYONE!

3.7 Overarching

3.7.1 Aligning with national and international targets

As mentioned in the section 4.1.2, regarding data collection, there is a need for data and targets to align with national and international indicators, to enable progress to be clearly reported.

Khyber Pakhtunkhwa, Pakistan, reports the National Drinking Water Policy 2009 did not align with the MDGs, though the National Sanitation 2006 policy does. However these national policies lack ownership by provinces and service providers since devolution. For example, the provincial Khyber Pakhtunkhwa Drinking Water Policy 2015 states it aligns with the SDGs, but only gives the daily minimum water supply of 45 lpd rather than the national standard of 45-120 lpd.

This synthesis report has already discussed the FSM situation in Pakistan, and it is apparent that they are not on track to meet the sanitation SDG due to lack of demand. Lost days and WASH related health costs appear to be acceptable, and there seem to be no plans to change aspirations about health or environmental norms.

Bhutan's Ministry of Health and Ministry of Works and Human Settlement has reflected SDG 6.1 and 6.2 in National Key Result Area 8: Water, Food and Nutrition Security Enhanced and 15: Liveability, Safety and Sustainability of Human Settlements of the 12th Five Year Plan 2018-2023.

Even so, a significant change is needed to achieve 100% safe water management, 100% safe sanitation, and 100% handwashing facilities with soap by 2030; around 16 times faster for safe water management and

23 times faster for safe sanitation. Towards this, FANSA Bhutan recommends establishment of independent monitoring mechanisms involving government and non-government organisations *"to collect accurate data on WASH coverage and access."*

3.7.2 Specificity –"the government should..."

All FANSA countries have prepared advocacy plans which note specific activities. While this synthesis report did not review the advocacy plans due to time constraints, it is this level of detail which is required to ensure that gaps and overlaps are addressed. General references to 'advocacy' are not useful.

Given the legislative and agency arrangements outlined above, communication is essential to prevent overlaps and gaps. Although every country mentioned issues with wasted budget, few country reports mentioned specific suggestions for how coordination could be achieved. It is understandable that for government agencies which are already stretched in terms of HR and budget, attending regular WASH specific meetings can seem another burden.

FANSA Khyber Pakhtunkhwa's report highlights the problem of this kind of generalisation regarding the Khyber Pakhtunkhwa provincial 2015 Drinking Water Policy which *"is quite comprehensive as it covers all important and strategic aspects of any good policy like sustainability, community participation, integration of 'Information and Communication – ICT', technology, long term planning, establishing a baseline of service and establishment of 'Geographical Information System GIS'... has emphasized for preparation of ... services in emergency. It also talks about resilient water infrastructure to brace the disaster. Last but not the least the policy has strongly advocated on establishment of regulatory regime."*

However, they then note that the document; published by the Public Health Engineering Department who usually work in rural areas; is *"mostly 'theoretical"* and lacks urban context. *"It identifies issues, challenges and proposes measures which are very general in nature, can be true for any state/country and not specific and practical",* failing to address the different water situations across the province, *"the Southern belt of KP is a water scarce area as compared to the Northern part of KP, but there is no specific mention, provision or policy"* for the brackish and deep ground water situation.

It is this level of gap identification that is required with prioritisation of a selected issue to be addressed, which provides clarity and momentum for change.

3.7.3 SACOSAN VII 2018

Mentioned by Nepal, Maldives, Sri Lanka, the SACSOSAN commitments seem very relevant to achieving CWIS and SMSS. It may be easier to find support by selecting country priorities from among these commitments, since they have already been discussed at length by the relevant stakeholders.

1. Establish Baselines and WASH Targets for SDGs
2. Streamline and Align Data Collection
3. Ensure No One Is Left Behind
4. Human Resource Capacity Assessment
5. Sectoral Reforms and Regulatory Frameworks.
6. Financial Planning and Reporting
7. Advocacy Plans and Campaigns
8. Prioritize WASH in Institutional Settings
9. Knowledge Management and Learning
10. Climate Resilience and Financing

Fig 12: SACOSAN VIII commitments (2018)

The Maldives identifies issues at all stages of the sanitation service chain, from lack of public toilets in general and specifically for children and people with disabilities,[46] MHM gaps, weak asset management, and the need to improve FSM.

Maldives' Policy Review provided progress updates on each of the SACOSAN commitments and noted areas where specific work is still needed, including issues arising from a change in political leadership; absence of public toilets and accessible toilets including in tourist areas, lack of agency coordination to produce timely data, continued lack of capacity or in-country training for environmental regulation; transfer and loss of trained staff, ineffective asset management systems for climate-resilient water projects, lack of MHM products and facilities at travel hubs.

46 http://icedfacility.org/wp-content/uploads/2018/04/ICED-Disability-Inclusion-Briefing-Note_Final-Mar_18.pdf

On a positive note, workforce training in the Maldives has been delivered by the national vocational training centre and a cadre of managerial staff are currently undertaking diplomas in water management by distance learning. Additionally, progress has been made on accessing finance for climate-resilient water supply and management.

4 Conclusion

In conclusion, all countries need assistance in developing data for advocacy, (as well as planning, prioritising, and assessing effectiveness) in order to address the gap between existing legislation, however outdated it may be, and implementation by the responsible agencies. Bangladesh and Pakistan, in Khyber Pakhtunkhwa, have highlighted the need to first improve awareness and understanding as well as implementing existing policies. Bangladesh, Maldives and Sri Lanka have all targeted faecal sludge management, while Sri Lanka also aims to address solid waste, which may have similar style solutions.

Climate related issues, together with watershed management, and water quality are target areas for Bhutan and Pakistan, in Balochistan.

Both the Maldives and Bhutan are interested to improve shared WASH facilities, for Bhutan in schools, monastic facilities, healthcare centres; and for Maldives the concern is lack of public facilities.

Nepal is the only country where inclusivity did not get subsumed by other concerns, but clearly it needs to be addressed in all project areas in order to meet the SDGs.

4.1 Political

Policy-implementation gap

- This is identified by all countries. Some prefer to focus on strengthen existing, though flawed, legislation in preference to attempting to revise or introduce new legislation. Others feel that updating legislation is more appropriate. In some cases no legislation exists and needs to be drafted, however bearing in mind the time line of this project, working on this, unless it is already underway, may not be appropriate.
- FSM and SWM are common areas where policy gaps exist, though detailed mechanisms for regulation and enforcement are also missing.

Data

- Due to the myriad benefits of having data, different countries have identified different areas where data is needed.
- In all cases an element of coordination is needed with other agencies as well as alignment with national and international targets and methods of measurement.

Water use competition and priorities

- A significant data gap relates to water use competition and how to ensure domestic water supply has protection from competition to safeguard health.
- To do this, health and economic benefit data will be required to advocate for protection and greater budget allocation, as well as stricter regulation of non-domestic consumption.

Communication, coordination, collaboration and accountability

- This is an obvious area where FANSA can play a role, sharing mechanisms from different countries to support greater coordination
- Data may also support efforts to avoid duplication of interventions, including in data collection itself.

Potential case studies

- At least two possible topics for developing case studies for learning and sharing were identified for further investigation i.e. NWSDB and the successful Water and Sanitation Service Companies.

4.2 Economic

Population migration and growth

- The inevitable increase in urban populations necessitates much bigger thinking when designing urban WASH services, to provide flexibility for the future. Small thinking only leads to additional costs at a later date and risks significant health and environmental consequences in the interim.

Funding WASH

- None of the countries have yet successfully applied cost-recovery principles to their WASH service provision, and either rely solely on or require subsidy from central government. Clearly this cannot support sustainable services.
- There are also tensions between affordable service provision and the capacity of marginalised groups. In all cases formal urban areas receive services more cheaply than informal settlements, an issue which needs to be resolved.
- Service level aspirations and willingness-to-pay boundaries should be fully researched, using marketing approaches.

Private sector principles and involvement

- Most countries have yet to implement successfully regulated private sector service provision in WASH, which is unsurprising since it requires strong government agencies.
- When addressing policy-implementation gaps, creating enabling environments for the private sector need to be considered, with simple enforcement mechanisms.
- Reliance on private sector for improved service quality and equity is misplaced as seen in many 'developed' countries. Limiting private sector to certain roles such as monitoring discharge licence compliance and reporting regulation violations may be more suited to their profit driven agendas.

Leveraging tourism

- For a number of the FANSA countries both domestic and international tourism are a source of income, which provides a lever for improving public WASH services. 'Tourist only' facilities should be avoided, but minimum standards maintained in all facilities to avoid duplication of infrastructure.

4.3 Social

"Nothing about us without us" & Women, children and the poor

- There is a need for suitably disaggregated data to identify the unserved, and address WASH inequalities.
- Decision makers in most of the countries across SA continue to be men from particular economic and ethnic backgrounds, and their understanding of WASH situations faced by other groups is generally weak, only intellectual rather than internalised. Countries which have made progress on increased inclusion in decision making forums need to share their various solutions with other project areas.
- The gap between the Bangladesh authorities' understanding of their city WASH situation and that reported by users highlights this issue.
- Awareness of the specific WASH needs of women and girls, particularly MHM, is necessary among decision makers and men in general. The lack of women in technical roles contributes to this gap and, although imperfect, quotas are one way of improving the situation. Understanding the myriad ways in which women and girls are negatively affected by WASH related issues may assist in designing more flexible solutions.

Creating demand, public accountably % Mobilising youth and social media

- Recommendations on the issue of demand creation and accountability were general and lacked specificity. These are areas outside the professional experience of many of the WASH service providers and users consulted during the policy review. Specialist support may be required from those with clear understanding of citizens' rights and advocacy in each country, to understand what has already been tried and what is likely to be successful.
- While mobilising new technologies such as naming and shaming on social media may be acceptable for informal groups, they may introduce risk and credibility issues for formal organisations.

Informal settlements

- The extent of informal settlements varied greatly across the project areas, but in all cases their WASH situations were significantly worse than those of formal areas. The service inequalities were heightened by higher prices, unsafe waste management leading to health and environmental pollution consequences.
- To meet the SDGs innovative solutions to reduce sanitation sharing to less than 5 households, and improve water quantity, quality, accessibility and reliability are required.

4.4 Technical

HR capacity, HR and budget sufficiency

- While technical capacity was specifically highlighted by some countries, very few suggested connecting to educational or training institutions, instead relying on training from technical government agencies, who already have operational responsibilities.
- Budget and HR sufficiency was also raised, but for this data based economic advocacy is required. Facilitating methods to estimate costs and benefits may be an area FANSA can support.

Operation and management

- As noted above, the application of cost recovery mechanism is still absent in most contexts.
- However, ensuring that designs produced by government departments are not just the cheapest but also enable O&M is essential is systems are to be sustained. At present, there is little incentive for design and construction quality to be ensured since schemes are handed over to other agencies for operation; communities, other government departments, private sector.

Faecal Sludge Management & Solid Waste Management

- Although these two issues have unique challenges, the managerial nature of both is similar, requiring long term sustained financial recovery, and creating economic benefit from the waste material.
- Failure to address SWM can cause blockage of drains, causing flooding and health risks. Similarly inappropriate discharge of FS into surface water drains can lead to contamination of water bodies.
- Urban dwellers have to accept that services cannot be provided for free if they want safe water supplies and safe living environments.
- Although technology may provide some solutions, behaviour, management are key to solving these two critical issues, assuming that regulations are enforced and services provided.

Schools, healthcare and public facilities

- Moving on from the MDGs, addressing WASH in institutional and public facilities is a priority. In addition, it contributes towards serving the unserved and reducing service inequalities; ensuring all students attend school, all patients have chance of successful recovery.
- Ensuring standards exist for institutional WASH is a first step, followed by regulation and enforcement.
- Investigation of technical solutions for institutional settings may be required; heavy duty materials and child proof designs.

Water and effluent quality, R&D

- Capacity for water testing is low even where water quality and effluent standards exist. Proxy indicators could be investigated, both for safe drinking water as well as regulating discharge licence compliance.
- In addition to water testing, awareness of safe handling and storage is needed, recognising that there are many sources of contamination both during conveyance to the point of use and within the house. Simple treatment solutions should be possible for all social groups

Media for WASH

- Modern media can be created and shared by nearly anyone. Selection of targeted messages for particular purposes can build momentum and create change, be it naming and shaming for accountable service provision, raising awareness of rights and responsibilities, behaviour change messages or sharing information on technical design and construction solutions as well as any proposals to enforce new or existing legislation; building codes or pollution control.
- Mobilising different groups can enable them to reach the unserved, in different languages or people with sight or hearing disabilities (audio or sign language media)

4.5 Legal

Sanitation worker health and safety

- Sanitation workers in south Asia often come from disadvantaged groups, a fact often taken for granted by society and therefore unchallenged. Addressing the systemic issues which restrict these groups to 'sweeper' work may be outside the scope of the FANSA project, but implementing and enforcing basic OHS requirements is not.
- Failure to enforce sanitation construction standards, include accessibility, means that manual emptying persists, putting workers and the environment at risk.
- Failure to pay liveable wages also puts lives at risk if workers cannot afford PPE or work-related preventative and response health treatment.
- Health insurance and other mechanisms can be explored, and creation of sanitation worker cooperatives may assist them to make demands for basic rights.

Regulation

- Most countries have some existing legislation but implementation and enforcement is lacking. Advocating for the necessary resources to effectively enforce codes and standards is necessary to prevent over-extraction of water by private interests, abuse of existing infrastructure/ services for which they are not designed, pollution and contamination of the environment which affects water quality, health etc, particularly of marginalised groups.
- Before enforcing legislation, householders need to have the opportunity to rectify their current situation, especially if no current solutions exist, e.g. no garbage collection, FSM treatment. Information and advice must be made available so that households can make informed decisions. Financial support/ tools may be required to implement or make changes to existing infrastructure. Barriers to marginalised groups must be resolved to avoid penalising them further with fines. Withdrawal of services is NOT an acceptable option.
- Penalties for violation need not only be financial, but may include training attendance, community service etc. Creative solutions are needed to avoid privileging the financially better off, who can afford fines or engage others to attend community service. All penalty systems must be transparent to avoid graft. Money raised through fines must be reinvested in the relevant service provision.
- Only once robust legislation is in place should out-sourcing of monitoring and enforcement to the private sector be considered, to adddess regulation and accountability.

4.6 Environmental

WASH sector pollution, regulation and enforcement

- This overlaps with Environmental 12. and Legal 7. above. Appropriate proxy indicators for water quality and effluent are needed in the absence of functioning labs with the necessary capacity to test samples.
- If licencing, permit and similar systems are already addressed in legislation, details for enforcement can now be developed. If no such requirements exist, then they need to be drafted, bearing in mind the practicalities of enforcement.

Solar energy

- Use of solar and other renewable energy is useful as a climate and disaster resilience intervention. However there are risks that 'free' energy may lead to over extraction from sources if not properly licensed and regulated.
- Rain water &reduce, reuse, recycling
- As with solar energy, water use reduction, reuse and recycling may ease pressure on depleting water sources as well as provide resilience to shocks. However, if water use competition from other sectors is not addressed, such efforts will have little impact.
- Despite it being universally accepted, continued use of potable water for toilet flushing should be reconsidered.
- Similarly RWH can also ease extraction from other sources, as well as provide 'safe' water if storage and handling are properly managed. However, the issue of storage continues to be an issue due to cost and space requirements.

Plastic waste

- Although this overlaps with Technical 5. there is a growing recognition of the problems arising from single use plastic, which would also reduce solid waste issues more generally. As with regulation, consumers need access to alternatives before governments can 'ban' plastics, particularly where water supply is intermittent or during disasters, when bottle water is often distributed.

COVID & climate change and disasters
A number of countries mentioned use of climate change funding to provide WASH resilience and disaster response interventions. Recognising that resilient WASH infrastructure doesn't only provide benefits during disasters but for the entire design life of infrastructure can be an area for advocacy.

4.7 Overarching

Aligning with national and international targets
- Section 3 highlighted the problem of understanding country progress when there is missing or mismatched data. While alignment with international targets is not a goal in itself, it enables countries to show progress and strengthens requests for assistance, financial or technical.
- Alignment with national targets is essential to enable identification of effective and ineffective interventions, avoiding wasted resources on activities which fail to deliver or entrench existing service inequalities.

Specificity
- As per the country advocacy plans, it is essential for detailed interventions to be developed. Generic recommendations are unhelpful and fail to identify or target the populations in greatest need, which will prevent the SDGs being met.
- Specificity also aids M&E, providing SMART objectives or performance indicators.

SACOSAN VII 2018
- 6 years have already passed since SACOSAN VII was held. A number of the commitments are highly relevant to CWIS, so it seems pertinent to build off these 'already agreed' targets rather than introducing new ones, which can lead to resistance.
- Positive progress towards commitments may encourage governments to expand activities and increase funding.
- Invigorated efforts can be made on commitments which have yet to see improvement.

4.8 Summary

In summary, the country policy reviews reflect the diverse geographical and political landscapes in which they were conducted. At the risk of over-generalising, we could say that the different countries have focused on the following:

BD	• Awareness of existing legislation and how to bring into implementation • Faecal sludge management which is entirely absent at present
BT	• Water quality issues • Institutional WASH, schools, monastic facilities, healthcare centres • Climate resilience
NP	• Inclusivity
PK	• Balochistan: Watershed management, source protection • Khyber Pakhtunkhwa: Strengthening implementation of existing interventions
ML	• Faecal sludge management and public facilities
SL	• Solid waste and faecal sludge pollution regulation
IN	• As noted in the introduction India is a mentor country, as such the Policy Review report did not provide specifics for the individual municipalities/ urban areas in which the project operates.

4.9 Unpacking the qualitative data analysis (QDA) results[47]

The following commentary is based on the QDA findings presented the Appendix, Table 7.

The QDA identified the most frequently occurring code under each theme for each country.[48] From a country-wise perspective, for all countries except Pakistan their greatest concern is technical capacity development or development of technical solutions. In Pakistan, Balochistan is more concerned about the Social issues, and Khyber Pakhtunkhwa about Political issues.

47 Note that countries can perceive their area of strength to also be a weakness if they are serious about achieving their targets. The same code may also be identified a strength or a weakness if the country has not considered other issues within that theme, e.g. under legal only discusses regulation and has not considered OHS issues. Conversely, a country may not assess its weakness accurately if it has not fully grasped the service levels to be achieved or the range of activities necessary for CWIS. There are also significant ranges in % 'code frequency' between countries.
48 Refer Appendix 7.2 for explanation of the QDAMiner process, codes, keywords, analysis logic and full QDAMiner results.

However, Bangladesh, Bhutan, Maldives, and Sri Lanka also felt most positive about strengthening Technical capacity or developing technical solutions to WASH problems. Nepal and Pakistan (Balochistan and Khyber Pakhtunkhwa) felt most confident about social issues, addressing inequalities and mobilising the private sector respectively; and are most optimistic about building off their existing legislation.

Political
- A funding gap was the main Political concern for Bangladesh, Bhutan, and Pakistan (Balochistan).
- The most positive area for all countries was existence of policies and legislation except for Sri Lanka who considered their WASH agencies as their most positive asset.

Economic
- The weakest area for all was asset management, i.e. financially sustainable operation and maintenance, except for Bhutan, whose main concern was urban population growth.
- However, nearly all countries also scored highest for asset management,[49] in terms of their acceptance of it as a necessary approach. Only Nepal scored higher on tariffs, suggesting they have internalised the concept, not just accepted the theory.

Social
- All countries identified the greatest weakness as service inequalities.
- The picture for strengths was mixed, for Bangladesh and Nepal's attention to marginalised groups had the most mentions in their review. For Pakistan (Balochistan) and Sri Lanka it was the potential or existing use of the private sector. For Bhutan it was hygiene and behaviour change, while for the Maldives it was attention to service inequalities.

Technical
- For Bangladesh, Bhutan and Pakistan (Khyber Pakhtunkhwa), the greatest weakness was felt to be sanitation; and for Maldives and Sri Lanka, it was FSM; and for Pakistan (Balochistan), it was water supply.
- Regarding technical strengths, Bhutan, Maldives, Nepal and Pakistan all have confidence in past and current water supply progress, though Maldives also felt positive about sanitation together with Bangladesh. Sri Lanka was the only country which felt positive about past and ongoing FSM efforts.

Legal
- All countries identified their greatest weakness as implementation and enforcement of legislation. In addition, Nepal was concerned about OHS compliance for sanitation workers.
- Interestingly though, all countries also mentioned regulation as their area of greatest confidence, except for Bangladesh and Sri Lanka who feel more positive about opportunities to strengthen OHS.

Environmental
- Pollution was considered the greatest challenge for Bangladesh, Madives, Pakistan (Khyber Pakhtunkhwa) and Sri Lanka. Climate risk was the main challenge for Bhutan, Maldives and Nepal, while Pakistan (Balochistan) was most concerned about over extraction and water source protection.
- Bhutan, Nepal and Pakistan (Balcohistan) felt most confident about addressing watershed management. Maldives, Pakistan (Khyber Pakhtunkhwa) and Sri Lanka felt positive about tackling climate change issues, while Bangladesh and Bhutan all hoped to address pollution.

Overarching
- Nearly all countries identified coordination and collaboration as their greatest challenge as well as also being an area for greatest opportunity, except for Pakistan (Khyber Pakhtunkhwa) who felt more positive about meeting the SDGs, while Sri Lanka's NWSDB was one of the only mentions of an agency getting on with the WASH challenge at hand.

49 As for 49, this may be because the countries did not discuss any other Economic factors positively, and therefore it occurred the most frequently, but not as strongly as the -ve occurence. E.g. from Fig 13 - BD Tech -ve: 33%, Tech +ve: 7%.

5 References

5.1 FANSA country 2023/2024 Policy Review reports

Bangladesh	"Reviewing WASH Policies, Programs and Budget Allocations, Identifying Key gaps in policy implementation, and mapping relevant Stakeholders for policy action concerning equitable and inclusive SMSS/CWIS", Islam
Bhutan	"Policy Review: WASH sector", 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 of wash policies, programs and guidelines of Pokhara & Hetauda", FANSA/ Lumanti
Pakistan	"Assessment of Balochistanistan Water, Sanitation, and Hygiene (WASH)", FANSA/ HOPE "Review of Khyber Pakhtunkhwa WASH Sector", Ahmad
Sri Lanka	"Review of Policies of WASH Sector in Sri Lanka", FANSA

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6 Annex

6.1 Country policy review recommendations

Below recommendations extracted from the respective country report for convenience.

6.1.1 Bangladesh

City Corporation level

- Lack of clear institutional FSM at local government level, fragmented responsibilities and inadequate coordination, limited capacity and resources. Resulting performance, including enforcement of standards, is not occuring ☐ establish FSM standing committee at City Corporation with clear roles and responsibilities for service delivery, regulation, financing, and monitoring with sufficient capacity and manpower, including funding.
- The city authority should immediately stop all illegal household sewerage connections through mobile courts. Such offences must be put within the jurisdiction of mobile courts.
- Formulate a generic city FSM by-law to form the basis for all cities immediately.

Pourashava level

- Mandatory to constitute the WASH-FSM standing committee at the Pourashava level.
- All Pourashavas must follow the 2023 FSM guidelines and formulate context specific by-laws.
- Pourashavas authority should immediately stop all illegal household sewerage connections through mobile courts.

Union Parishad level

- Reduce the UP standing committee responsibilities due to their limited resources and manpower.
- Initiate penalties for offenders as per the 5th schedule of the Local Government (Union Parishad) Act, 2009, i.e. water or environmental pollution, unhygienic toilets, urinals, etc.
- Union Parishad Act 2009 needs to be updated to specifically include sanitation, hygiene and FSM.
- Start awareness that toilets should have twin septic tanks and that open disposal of sewerage is not acceptable.
- Collect WASH tax by involving motivated people.

All three levels of LGIs

- Raise understanding of existing regulations i.e. Bangladesh Water Act and Rules, pro-poor strategy (BNBC, 2000), Strategies and Technical Guidelines, National Adaptation Plan, Climate-Resilient Water Supply and Sanitation Services etc.
- Urgent sanitation surveys to stop open defecation, massive awareness programs for safe disposal of faecal sludge.
- Implement the 2017 National Action Plan based on the Institutional and Regulatory Framework for (FSM.
- Promote menstrual hygiene management, including gender-responsive WASH planning and implementation.
- Start programs to gradually convert all single-pit toilets to off-set twin-pit/ septic tank toilets.

6.1.2 Bhutan

The key recommendations include:

Integrated Planning and Implementation

- Adopt integrated planning approaches considering trade-offs and synergies across SDGs. Streamline coordination among agencies involved in the water, sanitation, and hygiene (WASH) sector.

Monitoring Mechanisms

- Establish independent monitoring mechanisms involving government branches and independent bodies. Strengthen sector monitoring systems to collect accurate data on WASH coverage and access.

Capacity Development

Invest in human resource capacity at all levels for effective planning, implementation, and monitoring of WASH initiatives. Collaborate with technical training institutions and universities to bridge skill gaps.

Budget Transparency

- Ensure transparency in national and local budget documents regarding water and sanitation services. Allocate resources targeting marginalized groups and ensure accountability in fund distribution.

Addressing Rural-Urban Disparities

- Focus on improving urban sanitation services amid rapid urbanization. Develop innovative solutions for infrastructure development in remote areas.

Inclusivity

- Establish community mobilization units and provide gender training programs.
- Empower marginalized groups, including women and people with disabilities, in decision-making processes.

Healthcare Facilities

- Improve WASH conditions in healthcare facilities to prevent infections and mortality. Establish national policies and standards for healthcare facility WASH and coordinate efforts across health initiatives.

Youth Engagement

- Create opportunities for youth participation and representation in WASH initiatives. Leverage youth networks and social media for awareness and advocacy.

Behavioural Change and Education

- Increase awareness and capacity building through education and training at all levels. Utilize Information, Education, and Communication (IEC) strategies to promote WASH behaviors.

Policy Enhancement

- Apply comprehensive checklists for policy enhancement covering legislative, regulatory, financing, planning, monitoring, and sustainability aspects.

6.1.3 India

Gram Panchayats/ Panchayat Raj Institutions

- The financial systems of GP/PRI are computerized and administered through IMIS by staff. However, specific compliances must be adhered to for the utilization of tied grants. Therefore, it is imperative to provide training to GP functionaries, including Sarpanch, Ward Members, and VWSC Members, covering tied grants planning, budgeting, utilization, financial reporting, and compliance procedures.
- A detailed breakdown of expenses for WASH works should be systematically recorded and maintained.
- All development plans at the GP/PRI District levels, including the Village Action Plan, Annual Action Plan, Gram Panchayat Development Plan (GPDP), Block Development Plan (BDP), and District Development Plan (DDP), should undergo a comprehensive review. Integration of plans and works, aligned with the guidelines, is essential for the effective and efficient utilization of tied grants.
- The GP/PRIs should receive guidance on a specific "shelf of activities" whenever possible, specifying areas for which the tied grant can be utilized. It is needed to ensure that these grants are not duplicated for works covered under other schemes such as soak pits and rainwater harvesting structures, which may fall under the Mahatma Gandhi National Rural Employment Guarantee (MNREG) scheme. As many works are already

undertaken through the Swachh Bharat Mission (SBM) and Jal Jeevan Mission (JJM), careful planning at the GP/PRI level is essential to avoid overlap, and the tied grants should be spent judiciously.
- The GP/PRI work plan, providing comprehensive details on the utilization of 15th Finance Commission tied grants, should be prominently displayed on the GP office/board/wall. This display should include information on the received amount, expenditures, completed works, and the remaining balance, ensuring transparency and accessibility of crucial details.
- Work sites should feature display boards indicating that the undertaken projects are funded through the 15th Finance Commission tied grants.

Department of Drinking Water and Sanitation DWS Nodal Agency
- The Nodal Agency DDWS should facilitate seamless two-way communication and collaboration with GPs/ PRIs, State Governments, and the Ministry of Jal Shakti, Government of India.
- Ensuring the timely release of grants and their optimal utilization is crucial.
- Enhancing the role of VWSC/ Pani Samiti by transferring the FC tied grant received by the Panchayati Raj Institution/Gram Panchayat can foster greater community ownership.
- Conduct stakeholder meetings involving GPs, VWSCs, ISAs, CSR entities, RWS, PHED, and others.
- Organising convergence meetings with line-departments
- Facilitate in procuring standard material/ accessories for repairs/ fittings etc
- Printing Information, Education and Communication (IEC) material for wider outreach.

WASH Works
- Allocate priority to utilizing 15th FC tied grants for the construction of efficient drainage systems in streets, focusing on greywater flow, collection, and treatment. This prioritization is essential as certain critical water and sanitation projects are not adequately addressed within existing schemes.
- Capital Expenditure (CAPEX) and Operational Expenditure (OPEX) in planning and prioritize spending accordingly.
- Avoid allocating tied grants for Operations and Maintenance (O&M) expenses.

Village Water and Sanitation Committees & Community Based Organisations
- Capacity building is essential for Gram Panchayat (GP) functionaries, including Sarpanch and Ward members, VWSC/Pani Samiti, SHGs, ISA, local Community-Based Organizations (CBOs), CSR agencies, and other stakeholders. The focus should be on enhancing skills in works planning, execution, grant utilization, financial reporting, and compliance to ensure the effective utilization of tied grants.
- Sharing or transferring the 15th FC tied grant to the VWSC/Pani Samiti after it is received by the Panchayati Raj Institution/Gram Panchayat PRI/GP.

Community
- Encourage community engagement to foster transparency and accountability.
- Implement joint monitoring and conduct social audits.
- Promote collective decision-making.

Convergence of schemes
- Implementing convergence planning and optimizing financial resources at policy, district, and state levels.
- Prevent duplication of expenditures on identical projects across different schemes.

Stakeholders
- Conduction of coordination meetings at various levels for synergy, handholding support and public demand for WASH rights with GP,CBOs, VWSC, ISA, CRS, RWWS, PHED, NGOs, Sector Partners, Stakeholders etc
- Organize coordination meetings at multiple levels to foster synergy, provide support, and generate public demand for WASH rights. Participants should include GPs, CBOs, VWSC, ISA, CSR entities, RWSS, PHED, NGOs, sector partners, stakeholders, and more.

Vulnerable groups
- Give priority in expenditure to ensure coverage of LNOB, equity, and inclusion.
- Prioritize the utilization of 15th FC tied grants for initiatives not addressed by other schemes, such as SWM, LWM, Faecal Sludge Management (FSM), and Stormwater Drainage.
- Channel the 15th FC tied grants to prioritize the support for marginalized, vulnerable, and resource-poor communities and groups.

6.1.4 Maldives

Based on the outlined commitments in the Maldives, several future directions are essential for advancing water, sanitation, and hygiene (WASH) initiatives:

Addressing Wastewater Management and Public Toilets

- Prioritize efforts to improve wastewater management and effluent disposal. Address the lack of public toilets, especially in key areas like jetties and harbors, ensuring inclusivity for disabled individuals and children. Introduce well-managed public toilets in strategic locations to meet the needs of residents and tourists.

Enhancing Data Monitoring and Reporting

- Improved coordination and collaboration between line ministries in provision of data, and strengthen efforts by the National Bureau of Statistics to produce updated and reliable data on SDGs, specifically related to water and sanitation. Regularly update statistical information to ensure accurate monitoring of progress and informed decision-making.

Equitable Access to Water and Sewerage Facilities

- Support the government's commitment to providing water and sewerage facilities to all inhabited islands by 2025. Ensure that the efforts prioritize equitable access, addressing disparities between islands.

Human Resource Capacity Development

- Develop technical personnel in the water and sanitation sector by introducing courses at tertiary institutions. This is crucial for implementing the National Water and Sewerage Strategic Plan effectively.

Empowering Human Resource Capacity in WASH Sector

- Address the lack of human resource capacity resulting from legislative changes. Focus on empowering both the Utility Regulatory Authority (URA) and the Environmental Protection Agency (EPA) with sufficient staff and expertise.

Improving Financial Management for Climate-Resilient Projects

- Strengthen financial management procedures for climate-resilient water projects. Enhance transparency by providing detailed descriptions and categorizations of expenditures. Address issues related to asset management and monitoring through the World Bank project.

Sustaining Hygiene Awareness Activities

- Continue and expand hygiene awareness activities initiated during the COVID-19 pandemic. Ensure fair distribution across all islands, focusing on sustaining awareness campaigns for ongoing public health benefits.

Ensuring Sanitation Facilities at Healthcare Centres

- Ensure the availability of sanitation facilities, including menstrual hygiene management, at all healthcare facilities. Advocate for these services in all terminals at airports, contributing to a broader regional dialogue on menstrual health.

Capacity Building through Collaboration

Strengthen collaborations with the Technical and Vocational Education and Training (TVET) Authority, civil society groups, and international institutions. Continue initiatives like the Graduate Professional Diploma to enhance capacity and awareness in the WATSAN sector.

Accelerating Climate-Resilient Projects

- Continue promoting climate-resilient water supply and management through projects supported by UNDP, the Green Climate Fund, and other donors. Explore additional financing options, such as loans, to expedite infrastructure development and improve living conditions for island residents.

6.1.5 Nepal

Nepal has made commendable strides in water and sanitation, expanding access to basic services and achieving Open Defecation Free status. These reflect a commitment to citizens' rights and international goals. Challenges persist in wastewater management, particularly in urban areas, necessitating ongoing efforts and investments. Local governments play a crucial role, requiring capacity building and alignment with national laws. Nepal's

evolving policies emphasize inclusivity, including gender equality and social inclusion. However, there's room for improvement, especially in addressing the special WASH needs of vulnerable and marginalized groups such as people living in informal settlements, people with disabilities, sexual minorities, and sanitation workers. With dedication and collaboration, Nepal can move closer to its water and sanitation goals, improving citizens' well-being and environmental sustainability.

Pokhara faces critical WASH challenges, needing dedicated legislation with equity provisions for water resource management. Solid waste regulations should enhance stakeholder capacity and worker safety. Education regulations lack comprehensive WASH provisions, demanding inclusivity for all students. Integrating WASH into health policies is crucial for public health and equity. Increased budget allocation is vital to support these efforts effectively. Pokhara must proactively address these challenges for a healthier, more inclusive, and sustainable future.

Hetauda needs comprehensive WASH legislation recognizing citizens' rights to health services, safe water, and sanitation. Expanding the Water Resource Use Procedure to include water quality, faecal sludge, and inclusive infrastructure is crucial. Sanitation management should incorporate technology, financial aid, and measures for underprivileged households, with a focus on gender equality and socially inclusive infrastructure. These steps are essential for achieving equitable WASH services in Hetauda.

Pokhara

- In Pokhara Metropolitan City, existing regulations do not ensure comprehensive WASH provisions.
- The Environment and Natural Resource Protection Act lacks concessions for disadvantaged households and gender-responsive infrastructure.
- The Solid Waste Management Regulation does not consider stakeholder capacity and sanitation worker safety.
- Amendments to the regulation should prioritize capacity-building and worker protection.
- The Pokhara Metropolitan Education Regulation lacks inclusive WASH provisions, impacting safe and hygienic facilities for all students.
- The health policy overlooks the role of WASH in public health, necessitating the integration of inclusive WASH measures.
- Annual plans outline WASH and inclusion goals, but the budget allocation for WASH is low at 2%.
- There is a need to boost budget allocation to ensure equitable access and sustainability of WASH initiatives.
- Formulation of a dedicated WASH Act is highly recommended.

Hetauda

- Existing WASH related policies and laws in Hetauda Sub-Metropolitan City require revisions for a more comprehensive and inclusive approach to WASH.
- The Water Resource Use Procedure needs expansion to address water quality, faecal sludge, and inclusive infrastructure.
- The Sanitation Management Procedure should cover appropriate technology, financial assistance, and measures for underprivileged households.
- Efforts are underway to promote inclusivity, but the WASH budget allocation remains relatively low at 4.35% of the total budget.
- The proposed WASH Act should include provisions for support in underserved areas, concessions for disadvantaged households, and active participation of women and sexual minorities.
- Recommendations include the formulation of a dedicated WASH Act that explicitly recognizes fundamental rights to health services and safely managed drinking water and sanitation.

6.1.6 Pakistan: Balochistan

Institutional arrangements involve multiple departments and agencies, including Quetta Water and Sanitation Authority, Quetta Metropolitan Corporation, Quetta Development Authority, Public Health Engineering Department, Local Government and Rural Development Department, and the Irrigation Department. The document identifies weaknesses in institutional capacity, particularly in entities like WASA, QMC, and PHED, emphasizing the importance of qualified engineers in civil works. Overlapping responsibilities among these institutions create challenges in accountability and service delivery. The development and private sectors play a pivotal role in improving WASH infrastructure, offering services such as consultancy, construction, and provision of machinery. A call for robust monitoring mechanisms is stressed to ensure effective WASH interventions, and the document outlines budgetary allocations for water-related initiatives, emphasizing the need for reliable data to assess the impact of these allocations on WASH outcomes in Balochistanistan.

In conclusion, the review emphasizes Balochistanistan government's commitment to ensuring safe drinking water as a fundamental human right, aligning with the National Drinking Water Policy 2009. Despite challenges such as institutional limitations, economic weaknesses, and climate change impacts, the province aims to achieve SDG-6 on water and sanitation through a coordinated approach. Recommendations include adopting clear policies, enhancing policy implementation mechanisms, and prioritizing budget allocations based on needs outlined in master plans. The importance of accurate and updated data collection is stressed for informed decision-making. Additionally, the document recommends separate policies for urban and rural water, private sector engagement through Public-Private Partnership models, and a robust monitoring and evaluation mechanism to improve the efficiency and effectiveness of water and sanitation projects. The emphasis on strong policy frameworks and stakeholder collaboration highlights the need for concerted efforts to address the challenges in the water and sanitation sector in Balochistanistan and meet the SDG targets.

6.1.7 Pakistan: Khyber Pakhtunkhwa

The policy lacks in "practical" aspect as its mostly "theoretical". It identifies issues, challenges and proposes measures which are very general in nature, can be true for any state/country and not specific and practical. For example, the targets mentioned are not practical like it commits meeting all the targets by 2025, while the global target for SDGs is 2030 and MDGs was 2015. Although policy was notified in 2015 but it does not specify what has been the progress by 2015 which was terminating year of MDGs.

Policy has few duplications like policy "objective" and "principles" are synonyms to each other.

Although the policy is comprehensive, but it lacks in highlighting the area specific issue of water which is peculiar to three regions of KP. The Southern belt of KP is a water scarce area as compared to the Northern part of KP, but there is no specific mention, provision or policy guide to enhance coverage in that part.

The policy has been prepared by the Public Health Engineering Department (PHED) which has mandate for Rural Water only while there are two other institutions who have mandate to deliver services in urban and peri-urban areas of the province. The policy is dominant with rural water and has less on urban and peri-urban water and institutions who are responsible for these areas.

- The policy gives space to all legal stakeholders and explicitly describes their role, responsibility and functions.
- The introductory messages, in the foreword of policy, portrays the message as the policy is for "Rural Water Supply" only as it recognizes the efforts of Public Health Engineering Department (PHED).
- Target – The preamble mentions 2025 as year of policy target completion while there is no mention of baseline in preamble.
- The national Policy give threshold of 45 – 120 litres/person/day while the KP policy only mentions the lower limit of 45 litres/person/day.
- Like the National Water Policy prioritizes "drinking Water" on any other use of water the KP policy also does the same.
- The KP policy describes that water access has improved in KP since 1990 but it acknowledges that there exists no credible and authentic data about coverage of rural and urban water.
- It mentions overall coverage of 82% with 41% piped water. It also mentions that Urban water coverage is 98% and rural water coverage is 79%.
- The issues and challenges need to area specific (southern area, northern and central geographical area) of KP. The Southern belt is brackish and underground water is very deep, northern region has abundance spring so gravity flow through pipes is high tech and low-cost option.

6.1.8 Sri Lanka

A major setback in W&S sector is the lack of clear policies. Although, few policies on W&S were introduced, they are not operative. Stakeholders operates on their own without much coordination. This has led to waste of public funds and not reaching desired objectives. Review and updating of policies on water supply is necessary. Recently introduced National Policy of Sanitation (NPS) could be implemented as it is. Policy implementation must be given priority as without that effective coordination and monitoring cannot be established.

The recommendations of the policy review are as follows.

Implementation of clear policies in W&S sector

- At present there are three main policies in WASH sector. Among them, Drinking Water Supply Policy (DWP) and Rural Water Supply and Sanitation Policy (RWSSP) have been introduced about 22 years ago. They are

necessary to be updated based on today's context and better to develop two policies separately for urban Water and rural water The National Policy of Sanitation (NPS) which was introduced last year adequately cover sanitation in both urban and rural areas. Therefore, NPS can be implanted as any change.

Policies based on strong implementation mechanism

- DWSP and RWSSP did not consisted clear implementation or coordination mechanisms. Therefore, when new policies are drafted strong coordination and monitoring mechanism must be included. NPS already includes an adequate coordination mechanism.

Legally enforceable policies

- As the line ministry responsible for water and sanitation, MWS must take leadership in formulating of policies with consultation and agreement with all stakeholders. Further, they must be legally enforceable so that all stakeholders will function within a common framework. In this case Water Supply Master Plan (WSMP) and Sanitation Master Plan (SMP) could be used as guiding documents for future water and sanitation investments.

Allocation of budgets

- Fund allocations must be carried out with careful assessment of needs and sustainability of interventions. They should be based on the needs identified through the policies and within the framework introduced by master plans.

Collection of accurate & updated data

- Data collection is very important for decision making. Responses from various actors on data collection is quite different. While some stakeholders are not interested in data collection, many agencies are reluctant to share data, although they are collected properly. All stakeholders must take an interest on data collection and dissemination. This can be monitored and achieved through proper implementation of policies in W&S.

Monitoring of SDGs with stakeholders

- Critical monitoring is a vital requirement for achieving SDGs. While Department of Census & Statistics (DC&S) and Sustainable Development Council (SDC) officially handle this activity, they cannot do it alone unless participating stakeholders are not providing accurate data on time. Specially in W&S sector, this is very important as the sector is highly diverse and pragmatic. This area should also be well covered through effective implementation of policies.

Allocation of sufficient funds for sanitation

- Sanitation sector has been allocated only a very small amount of funds compared with water sector during past three decades. While need for allocating funds for water supply in needy areas is accepted, the sanitation sector must be given priority allocation of funds. This is vital in eradicating open defecation and construction of septage treatment facilities which is upcoming as a growing need.

Improvement of city-wide inclusive sanitation

- As explained in chapter 8, sanitation services in urban areas need much attention. Specially in provision of public toilets, provision of sanitation facilities for marginalized groups and sanitation improvements in schools and provision of adequate facilities for emptying of septic tanks needs to be prioritized.

6.2 Qualitative Data Analysis coding and keywords

Qualitative Data Analysis is an iterative approach (Fig 12), where the PESTLE groups provide the themes within which codes are assigned.

The themes, codes and keywords applied are listed in Table 6.

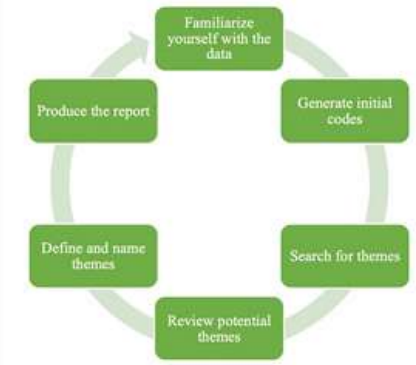


Fig 13: Cycle of thematic analytic (adapted from Braun & Clarke)[50]

50 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

Country	Political -ve	Economic -ve	Social -ve	Tech -ve
BD	funding/ budget source (4.7%)	O+M (0.9%)	service in/equality (3.9%)	San (11.0%)
	11%	2%	18%	**33%**

The code occurring most frequently within the theme
The total frequency for all codes within that theme
The theme with highest (and lowest) for each country are in bold

QDAMiner identified country clusters as Fig 14, based on similarities and differences in content of their entire report. This may indicate possible opportunities for shared learning or activities.

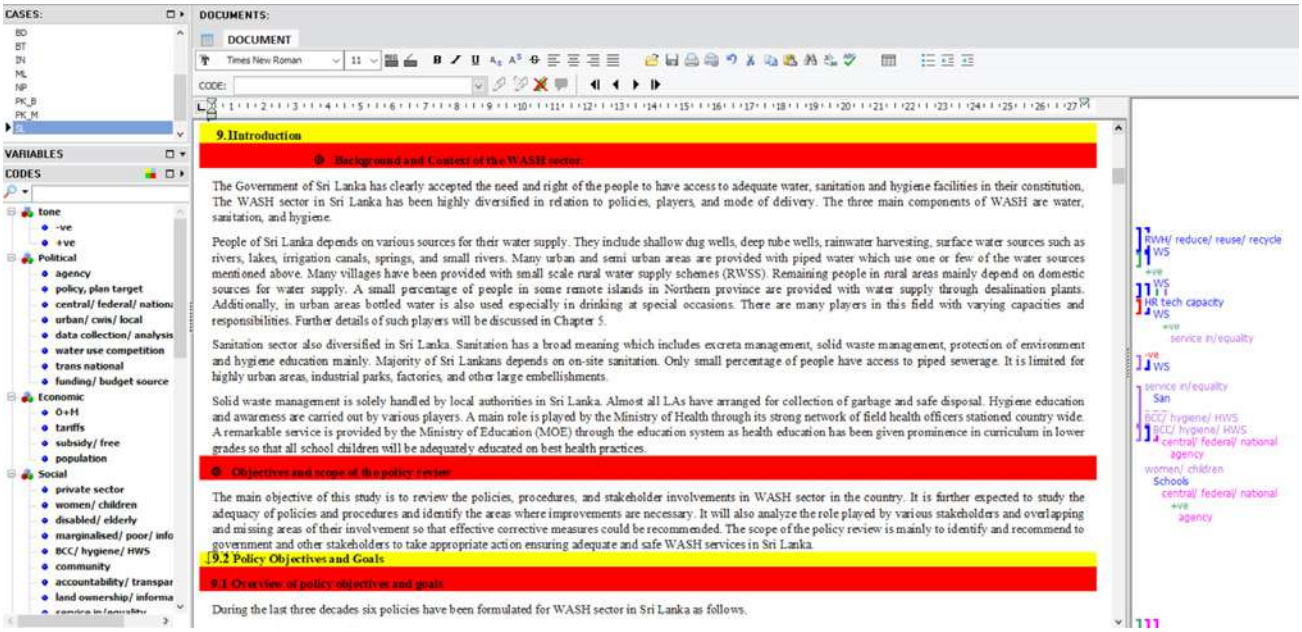
Fig 14: QDAMiner country clusters

Table 6: Themes, codes and keywords

Theme	Code	Keyword
Tone	positive	success, best, model, present
	negative	fail, failure, critical, collapse, gap
Political	agency	ministry, agency, government, department, council, panchayat, gp, vdc, development_ committee, lga
	policy, plan target	policy, act, regulation, reform, target, decision, leaders*
	central/ federal/ national	central, federal, national, district, province, state
	urban/ cwis	urban, city-wide, city_wide, municipal, province, state, dzongkhag, municipality, local_ government, lg, las, thromde,, dzongkhag, decentral*
	data collection/ analysis	data_collection, data_analysis, data, documenta*, data_sharing
	water use competition	agriculture, industry, fishing, farming, tourism ,irrigat*
	trans national	trans_national, trans_boundary, international, downstream, upstream
Economic	O+M	o&m, operation, maintenance, asset, asset_management, rehabilitat, functionali infrastructure, expenditure, rehabilitat*, functionali*, finance, budget_alloca*
	tariffs	tariff, fees, charges, rates, cost, labour_contri*
	subsidy/ free	subsidy, subsidies, free, no_cost, cost_free, grant
	population	population_growth, migration, population_migration, urban_migration
	private sector	private_sector, business, ppp, market
Social	women/ children	women, female, girls, woman
	disabled/ elderly	disabl, disabil, differently, elderly
	marginalised/ poor/ informal	marginalis, marginaliz, unserved, disadvantaged, poor, informal_settlement, urban_poor uneducated, slum, backward, inclus*
	BCC	behaviour, bcc, eic, behaviour_change, behavior_change, hand_wash, soap, awareness, knowledge, messag*, hygiene, health, washing, hws, demand_creation
	community	community, cbo*
	accountability	accountab*, transparen*, liabilit*
	land ownership	land_own*, land_right*, informal, slum
	service inequality	service_inequality, inequality, disparity, gap, public_toilets, communal, shared
technical	WS	piped, gravity, improved_source, unimproved_source, surface_water, well, wtw
	San	pit, septic_tank, biogas, gobar, sewer, network, safely_managed, safe_sanitation
	SWM	swm, solid_waste, garbage
	FSM	wwtp, stp, treatment_plant, dumping, vacuum, gully_sucker, fecal, feacal, sludge
	WQ/ HT	water_quality, water_testing, wq_testing, water_analysis household_treatment, wq, quality_analysis, water_analysis, analy*
	MHM	menstrua*, mhm, sanitary_product*, gender_friendly
	HCFs	health_centre*, health_center*, health_unit*, hospital*, clinic*
	Schools	school*, shedra*, lobra*, educational
	RWH/ reduce/ reuse/ recycle	water_reduct*, water_reus*e, water_recycl*, water_efficien*, rwh, rain
	M+E	monitoring, evaluation, m&e, m_and_e, indicators, evaluation, assessement, performance
	HR tech capacity	technical_capacity, skills, hr_capacity, capacity_building, training
	HR/ budget allocation	insufficient_budget, insufficient_hr, inadequate_budget, inadequate_hr, budget_allocation
	R+D	research, appropriate_tech*, sustainable_tech*, development, r&d, technol*
Legal	Regulation/ violation	enforce*, regulat*, violat*, licence, license, permit, approval_to, stndards*
	fines/ penalties	fines, penalties, prizes, certificat*
	H+S/OHS	ohs, occupational, health_and_safety, h&s, safety, ppe, protective_gear, protective_ equipment, gloves, overalls, sanitation_workers, surveillance
	non-discrimination	discrimination, prejudice, caste, ethnicity
Environment	pollution	pollution, dumping, effluent, eia, iee, mpact_assessment, environmental_impact
	climate change	climate, sea_rise, salin*, resilien*, adapta*, mitigati*, disaster, drr
	drought	drought, dry, water_scarcity, low_water_table, low_ground_water, extraction
	flood	flood, standing_water, marsh, bog
	COVID	covid, pandemic, epidemic
	deforestation/ wshed degredation	deforest*, watershed, degredat*, conservat*, desertifi*
Overarching	advocacy/ demand	fansa, advoca*, focus_area, recommendation, suggestion, opportunit*, priorit*, media, gap*

Theme	Code	Keyword
	collab/ coord	collaborati*, coordinati*, communicati*, partner, standing_committee, sacosan
	best practice	best_practice, good_practice, model, case_study, safely_manag*, access_to_safe, safe_manag*
	critical failure	fail, open_defecation, sludge_discharge, unimproved_sanitation, no_service, no_facilit*
	SDG/ MDG	align, sdg, mdg

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



Each code was then combined with the +ve and -ve "tones";. "+ve" x "agency", "+ve" x "policy" etc
QDAMiner 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 aimed to highlight gaps and therefore negative aspects of the current situation are highlighted more than the positive.

Spelling and terminology differences mean that the software may not identify every relevant occurrence.

The software cannot identify 'gaps' that fail to be mentioned, for example health and safety of sanitation workers is critical but there are few mentions of legislation and agency regulation of standards. Automated analysis cannot identify this kind of gap, it is still necessary to read the documents in full.

The reports have different styles; some repeat the same content numerous times; in discussions, recommendations lists and conclusions. Additionally, multiple informants may repeat the same ideas. Therefore the absolute number of occurrence 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.

In the available time, it was not possible to get clarification on queries from each country and the consultant has had to make certain assumptions based on their experience.

6.2.2 Coding analysis results

Based on the above process, the % frequencies are given below.

Table 7: Country-wise perspective of QDAMiner analysis

Country	Political -ve	Economic -ve	Social -ve	Tech -ve	Legal -ve	Env -ve	O/A -ve	Political +ve	Economic +ve	Social +ve	Tech +ve	Legal +ve	Env +ve	O/A +ve
BD	funding/ budget source (4.7%)	O+M (0.9%)	service in/ equality (3.9%)	San (11.0%)	Regulation/ violation (6.9%)	pollution (3.8%)	collab/ coord (4.9%)	policy, plan target (0.8%)	O+M (0.8%)	marginal'd/ poor/ informal (0.9%)	San (2.6%)	H+S/OHS (0.2%)	pollution (0.5%)	collab/ coord (0.3%) SDG/ MDG (0.3%)
	11%	2%	18%	33%	8%	6%	5%	3%	1%	4%	7%	0%	1%	1%
BT	funding/ budget source (30%)	population (1.4%)	service in/ equality (4.4%)	San (6.8%)	Regulation/ violation (0.7%)	climate/ DRR (1.6%)	collab/ coord (1.4%)	agency (1.2%) policy, plan target (1.2%)	O+M (2.1%)	BCC/ hygiene/ HWS (3.3%)	WS (10.5%)	Regulation/ violation (0.9%)	pollution (0.9%) COVID (0.9%) deforestn/ wshed degredatn (0.9%)	collab/ coord (1.4%)
	6%	3%	10%	22%	1%	4%	3%	5%	3%	11%	25%	2%	4%	2%
ML	data collection/ analysis (4.7%)	O+M (3.5%)	service in/ equality (3.5%)	FSM (5.2%)	Regulation/ violation (1.2%)	pollution (2.3%) climate/ DRR (2.3%)	collab/ coord (1.7%)	olicy, plan target (7.6%)	tariffs (1.2%) O+M (1.2%)	service in/ equality (2.9%)	WS (5.2%) San (5.2%)	Regulation/ violation (1.2%)	climate/ DRR (6.4%)	collab/ coord (2.9%)
	8%	4%	6%	15%	1%	5%	2%	10%	2%	4%	21%	2%	16%	4%
NP	data collection/ analysis (3.2%)	O+M (0.5%) tariffs (0.5%)	service in/ equality (10.2%)	HCFs (7.5%)	Regulation/ violation (1.1%) H+S/OHS (1.1%)	climate/ DRR (1.1%)		urban/ cwis/ local (1.1%) data collection/ analysis (1.1%)	tariffs (1.1%) subsidy/ free (1.1%)	marginalised/ poor/ informal (4.3%)	WS (3.2%)	Regulation/ violation (1.1%)	deforestation/ wshed degredation (0.5%)	collab/ coord (2.2%)
	9%	1%	26%	30%	2%	2%	0%	4%	2%	11%	9%	1%	1%	2%
PK	funding/ budget source (3.2%) policy, plan target (6.9%)	O+M (2.9%)	service in/ equality (5.7%)	WS (9.5%)) San (3.3%)	Regulation/ violation (4.1%)	drought/ extraction (4.6%) pollution (1.6%)	collab/ coord (3.6%)	policy, plan target (3.6%)	O+M (0.6%)	private sector (1.6%) women/ children (2.0%)	WS (2.6%)	Regulation/ violation (0.6%)	deforestation/ wshed degredation (1.3%) climate/ DRR (0.7%)	collab/ coord (0.2%) SDG/ MDG (0.6%)
	17%	5%	19%	20%	5%	8%	5%	7%	1%	5%	6%	1%	2%	1%
SL	policy, plan target (4.5%)	O+M (3.5%)	service in/ equality (3.8%)	FSM (7.0%)	Regulation/ violation (3.8%)	pollution (2.8%)	collab/ coord (3.8%)	agency (5.2%)	O+M (1.7%)	private sector (0.7%) service in/ equality (0.7%)	FSM (4.9%)	H+S/OHS (0.3%)	climate/ DRR (1.0%)	best practice (1.4%)
	15%	5%	8%	18%	5%	4%	5%	13%	3%	2%	18%	0%	2%	2%

For Further Details, Contact

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FANSA Regional Secretariat Hosted by

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