Knowledge and Practice Gaps in Climate Resilient Inclusive WASH

Water For Women

Building Climate Change Resilience and Adaptation in Inclusive WASH

UTS Institute for Sustainable Futures

Australian Aid

Report at a glance

This report outlines the unique strengths and contributions that Water for Women can make to building climate change resilience and adaptation in inclusive water, sanitation and hygiene (WASH), through contributions to the regional and global WASH sector and enhanced internal capacity. It provides a summary of outcomes from consultations and analysis concerning climate change and WASH, both within Water for Women and externally, including country perspectives and regional and global agencies. It was developed during the design process for the Climate Change Learning Partnership under Water for Women's Learning Agenda, during January – April 2022.

About Water for Women

Water for Women supports improved health, gender equality and wellbeing in Asian and Pacific communities through socially inclusive, sustainable and resilient water, sanitation and hygiene projects and research. It is the Australian Government's flagship WASH development assistance program, investing AUD 118.9 million over five years. Water for Women is partnering with civil society organisations (CSOs) and research organisations to deliver 33 projects in 15 countries. Knowledge and learning are central to Water for Women, positioning the Fund as an important contributor to global knowledge development and sharing in inclusive WASH. Water for Women's Learning Agenda promotes collaborative learning, knowledge development and sharing to support long-term transformative change to WASH policy and practice globally.

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Front cover: A local resource person and users ensure their water source is clean at Dharkhola spring, Dungeshwor Rural Municipality, Ward no. 6, Dailekh, Nepal. Credit: SNV Nepal / Uday BC

Abbreviations

CSO	Civil Society Organisation
DFAT	Department of Foreign Affairs and Trade
DMO	Disaster Management Organisations
DRR	Disaster Risk Reduction
GEDSI	Gender Equality, Disability and Social Inclusion
GHG	Greenhouse Gas
govt	Government
Lao PDR	Lao People's Democratic Republic
MEL	Monitoring, Evaluation and Learning
NAP	National Action Plan
NDC	Nationally Determined Contributions
PNG	Papua New Guinea
RHO	Rights Holder Organisation
SWA	Sanitation and Water for All
SWOT	Strengths, Weaknesses, Opportunities and Threats
UTS-ISF	University of Technology Sydney, Institute for Sustainable Futures
WASH	Water, Sanitation and Hygiene
WRM	Water Resource Management

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Introduction

Water for Women, delivered as part of Australia's development assistance program, supports water, sanitation and hygiene (WASH) for all in the Asia-Pacific region through 20 projects being implemented by civil society organisation (CSO) partners and 13 research projects. As Water for Women has matured, it has built an increasingly strong focus on climate resilient WASH systems, communities and infrastructure across the portfolio.

Under Water for Women's Learning Agenda, its Climate Change Learning Partnership comprising a consortium of Fund partners is advancing Water for Women's collective understanding of climate resilient WASH, by leading and coordinating the development of a strengthened knowledge-base for inclusive, climate resilient WASH. The partnership is drawing on Water for Women's collective knowledge and learning from across the Asia-Pacific region, and the broader sector.

This report provides a summary of outcomes from consultations and analysis concerning climate change and WASH, both within Water for Women and externally, including country perspectives and perspectives of regional and global agencies. It was developed during the design process for the Climate Change Learning Partnership under Water for Women's Learning Agenda, during January–April 2022. The aim of this report is to clarify the unique strengths and contributions that Water for Women can make to enhance internal capacity in this area, as well as contribute to the broader regional and global WASH sector.

This document was produced collaboratively, involving design team members from the University of Technology Sydney's Institute for Sustainable Futures (UTS-ISF), the International WaterCentre at Griffith University, WaterAid, the International Rescue Committee, Plan International and SNV Netherlands Development Organisation. It was reviewed by iDE and RTI International.

In preparing this document, the design team:

- developed a framework for climate resilient WASH, building on the WASH systems building blocks[1] and previous work by UTS-ISF (see Table 1 below)
- ran an online survey with Fund partners (hereafter referred to as partners), with 13 responses[2]
- conducted interviews with organisations and programs actively working on WASH and climate change, including three global, four regional, three Australian-based, four sections of the Australian Government's Department of Foreign Affairs and Trade (DFAT), and three non-Fund partner CSOs
- conducted a strengths, weaknesses, opportunities, and threats (SWOT) analysis in 10 countries based on the framework, led by Water for Women partner staff, and where possible involving national government stakeholders
- set up a discussion group with 154 members, then facilitated a three-week e-discussion achieving 21 contributions from nine partners in eight countries with a focus on climate change in WASH in Asia and the Pacific.

This report provides high-level findings from across these consultations, with a view to guiding the development of work packages for the Water for Women Learning Agenda.

Information in this report has been de-identified to protect the privacy and confidentiality of the organisations involved.

[1] The framework for climate resilient WASH builds on five Sanitation and Water for All (SWA) building blocks plus 'infrastructure', 'environment/water resources' and 'user engagement'

[2] Responses from 12 partners and one non-Fund partner have been collated

Table 1. Analytical framework for climate resilient WASH

Building block	Climate resilience aspects
Policy and strategy	• Climate resilience in WASH policy and strategy • WASH in climate policy and strategy • Gender equality, disability and social inclusion (GEDSI) aspects of climate change impacts in WASH
Institutional arrangements (national or subnational)	• Clarity of agency roles and responsibilities for climate resilience • Coordination between WASH-related agencies and other agencies (e.g. on climate change/ meteorology, water resource management (WRM), disaster risk reduction (DRR), social development)
Financing (national or subnational)	• Costs and financing for pro-poor/GEDSI assistance in climate change response • Financing to improve learning and experimentation in new approaches • Financing viable private sector business models for resilient services • Costs and financing for climate-proofing infrastructure, disaster recovery, diversification or building in redundancy
Capacity development (national govt, sub-national govt, CSOs, rights holder organisations (RHOs), disaster management organisations (DMOs) and the private sector)	• Capacity in climate risk identification, vulnerability and resilience assessments • Capacity in implementing adaptation response
Planning, monitoring and review (national and subnational)	• Inclusion of climate data, risks, vulnerability assessments and adaptation responses in WASH plans • Monitoring systems for climate risks and impacts on WASH services • Inclusive planning and disaggregated monitoring, evaluation and learning data on climate impacts on disadvantaged groups
User and community engagement	• Access to data on climate change and WASH, including for women and disadvantaged groups • Valuing and integrating local knowledge of climate into WASH planning and evidence • Awareness or behaviour change in users and communities about climate change, implications for WASH and adaptation responses • Public and civil society leadership on climate action in WASH, including rights and accountability
Infrastructure	• WASH infrastructure that can withstand or resist expected climate impacts and relevant design standards • WASH infrastructure that is responsive to climate impacts by offering multiple options for accessing WASH due to being quickly repairable or having adjustable management • Resilient WASH infrastructure that is accessible to and meets the needs of all people
Environment and water resources	• Climate change impacts on hydrological systems at basin and local scales and links to WASH service delivery • Infrastructure or management actions to protect or improve the quality and quantity of water resources needed for climate change resilient WASH service delivery • Inclusive decision-making about water resource management during climate extremes to ensure WASH service continuity

Country status, priorities, strengths and gaps

Country contexts in Asia and the Pacific cover a range of socio-ecological zones that experience different climate hazards with different societal implications. Table 2 below summarises the e-discussion on key zones (with the Pacific added by the design team).

Table 2. Socio-ecological zones in Asia and the Pacific (based on e-discussion inputs)

Examples of changes by 2050	Rural	Town/peri-urban/urban
Mountain e.g., Nepal (hills, mountains), Bhutan	More extreme weather events, change in rainfall and snow patterns, temperature rises, health impacts/trends (malaria, diarrhoea), landslides, erosion, surface water contamination, stress on existing resources and inequalities, outward migration Damage to water resources, economy, livelihoods, biodiversity Resource scarcity	Emerging peri-urban areas, increased decentralisation Rural to urban migration trends, economic development
Dry e.g., Nepal (terai), India	Less rainfall, more economic development and population pressure on water availability, more extreme weather events, disease outbreaks due to contaminated water sources Potential for desertification	Economic development, population pressure on water availability, rural to urban migration
Coastal e.g., Bangladesh	Extreme weather events, rising seas, floods, intensifying cyclones, contaminated surface water sources Harm to livelihoods, food security and ecosystems Instability and increasing risk of violence against women and girls	Improving coordination/interaction between RHOs in a country and its WASH sector Partnering with RHOs and GBV referral services
Delta e.g., Cambodia	Extreme weather events, sea level rise, land subsidence, saltwater intrusion, decreased storage capacity of aquifers, economic development, unsafe latrine emptying practices Threats to food security and agriculture Displacement, increased socio-economic inequality and strife	Significant economic development and urbanisation, with inadequate watershed and wastewater management, lack of flood protection and inundation of open sewage channels
Small islands e.g., Southwestern Pacific	Ocean acidification and marine heatwaves reducing food security, rising sea levels threatening low-lying islands, coastal inundation and erosion, more intense but fewer cyclones, heavy rainfall events, increased aridity	Rural to urban migration, increased population putting pressure on water availability and quality

An analysis of country status in relation to climate change and the various building blocks, as described by CSO teams or CSO teams in collaboration with national governments, is presented in Table 3. It identifies strengths, weaknesses, opportunities and threats in the Asia and Pacific region. Countries included in the SWOT analysis were Bangladesh, Bhutan, Cambodia, Indonesia, Lao People's Democratic Republic (Lao PDR), Nepal, Pakistan, Papua New Guinea (PNG), Solomon Islands and Timor-Leste; additional material on India was added by the design team, as well as insights arising from the e-discussion where relevant.

Table 3. Analysis of country status on climate resilient WASH with respect to building blocks

Building block	Overview of status across countries
Policy and strategy	Some countries (Nepal, Lao PDR) have integrated WASH into climate policy and climate change into WASH policy, but others (Bangladesh, Bhutan, Cambodia, Pakistan, PNG, Timor-Leste, Indonesia, Solomon Islands) have not yet. The process has started in Pakistan, and there was an opportunity noted in Cambodia to integrate WASH into its National Action Plan (NAP) and DRR policies. Bhutan could strengthen its focus on sanitation and hygiene (not just water) and GEDSI aspects of WASH, and Indonesia, Pakistan and Solomon Islands could strengthen attention to GEDSI in relevant policies. The e-discussion highlighted that systems, regulations and other solutions will need to be targeted and fit appropriately to context (including socioeconomic and geographical/climate considerations) using tools to identify varying thresholds of vulnerability. Equally, the discussants noted that organisations are already implementing much of the change needed to respond to climate change: services are better financed, better managed, better maintained, more equitable, and deliver on the right to water and sanitation by providing universal access. The e-discussion also highlighted that Bangladesh and Nepal's policies now include climate change issues, and that these could be translated to the local level.
Institutional arrangements (national or subnational)	In most of the 10 countries, institutional arrangements can be strengthened by clarifying roles and responsibilities related to climate resilient WASH services, and better coordination of WASH agencies and other agencies (e.g., WRM or meteorology authorities). Sector roles are already defined clearly in Bhutan, and this is also the case at national level in Lao PDR and sub-national level in Indonesia. Effective mechanisms for coordination between WASH and non-WASH agencies are emerging. For example, Cambodia has a coordination plan, and Nepal has a coordination mechanism (although WASH has not yet featured prominently in its operationalisation). In India, coordination between relevant WASH ministries and the Ministry of Environment, Forests and Climate Change could be strengthened. The e-discussion highlighted the need for environment ministries to take a more active role in coordinating management of water, environment and climate.
Financing (national or subnational)	Climate resilient WASH financing can improve in many respects. In particular, of all 10 countries, only Lao PDR provides financing for pro-poor/GEDSI assistance in climate change response (and only for emergency response). Financing processes are regarded as opaque; insufficient funds are available for rehabilitating water infrastructure; existing financing focuses on rehabilitation of other infrastructure (e.g., of roads, bridges) rather than resilience in some countries. Discussants identified various funding sources that could be tapped to promote climate resilient WASH. These included the Climate Development Authority and private sector actors in PNG, financing allocated to improve climate information and irrigation in Lao PDR, emerging public–private partnerships in Indonesia's climate change program, government subsidies for climate-friendly approaches in Pakistan, and funding for mobile toilets in emergency response in Lao PDR. It was noted that financing innovations, including climate-focused subsidies and public risk mitigation/insurance pools, are needed. In India, private sector funding requires bankable, high-impact projects in which they can invest for equity or corporate social responsibility.
Capacity development (national govt, sub-national govt, CSOs, rights holder organisations (RHOs), disaster management organisations (DMOs) and the private sector)	Three countries were reported to have strengths in capacity for risk identification, vulnerability and resilience assessments: Timor-Leste in technical capacity at national level, Indonesia with methods described in the National Climate Change Adaptation plan, and Solomon Islands with training underway. This area was also identified as an opportunity in PNG, Pakistan and Nepal. In PNG, capacity exists within the climate change development authority, but more is needed for WASH. In Pakistan, the government is prioritising capacity assessment and risk identification at both national and provincial level. In Nepal, the government is focused on capacity in climate resilient water safety planning, and this can be a basis to increase capacity. In Cambodia, capacity was reported to be is available at national level, but not yet at subnational levels.

	Indonesia was reported to have strength in adaptation response, specifically in adaptation programs promoted by government and CSO programs, although these were not specific to WASH. Contingency planning is being operationalised in Cambodia, sectors are being directed to develop adaptation plans in Pakistan, awareness is already high in Nepal, and in Bhutan there is capacity at national level, but not yet at subnational levels or amongst CSOs and the private sector. The e-discussion highlighted that local governments will be increasingly important in local responses; they need appropriate tools, skills and budgets to respond proactively and communicate with communities that each may have differing contexts. In addition, participants noted that existing systems and capacities need strengthening and greater focus on sustainability, functionality and resilience.
Planning, monitoring and review (national and subnational)	Planning, monitoring and review were seen as strengths in the Solomon Islands, to a lesser extent in Nepal, and elsewhere as a weakness. In Solomon Islands, the government monitors and assesses climate risks on atolls and vulnerable islands. In Nepal, the government has delivered a report on vulnerability, risk assessment and adaptation options. Collection of data is often siloed or fragmented; only Nepal and Solomon Islands are reportedly integrating available information in WASH plans. Monitoring systems are in place in some countries, but seen as weak, and aimed at climate hazards not connected to WASH impacts and services. Across the region, data is not disaggregated and does not consider GEDSI, with the exceptions of Nepal and Solomon Islands.
User and community engagement	All country partners could improve performance on this building block. The only country with significant strengths is Timor-Leste, where the government is running media campaigns to educate the community on climate change effects, and local knowledge is taken into account in planning. Nepal reported strengths in the integration of local knowledge into planning. In some other countries, governments resist inclusion of marginalised groups' perspectives in planning. In the e-discussion one contributor noted that, in Cambodia, when systems fail (e.g. latrine pits are full or toilets stop flushing), households could adapt relatively quickly with support from the local private sector. In areas experiencing drought, such as parts of Indonesia, insufficient water to sustain agriculture, food security and livelihoods also reduces the ability of rural communities to maintain hygiene behaviours. Contributors also noted that an adaptive WASH system should include all segments of the community, raise awareness of climate change and adaptation, and strengthen the capacity for mass mobilisation.
Infrastructure	Threats to climate resilient WASH infrastructure exist in multiple countries. In PNG, the current focus is on recovery rather than resilience efforts, and although some of Pakistan's infrastructure is shockproof, it was designed with energy or water efficiency in mind, and current designs could be improved to be made more affordable and more easily repaired. Other challenges raised were poor quality infrastructure due to insufficient resources (Cambodia), too little financing for resilient infrastructure (Indonesia), community not repairing broken infrastructure (PNG), and government requiring a contingency plan for climate events (Timor-Leste). Lao PDR reportedly has no budget for resilient infrastructure. In Nepal and Bhutan, an opportunity was noted concerning the potential to learn from a large-scale climate resilient water supply project and adoption of innovative technologies. The Timor-Leste government has guidelines for inclusive resilient facilities, although these aren't always followed. The e-discussion highlighted a need for low-cost systems that can be maintained and repaired locally and can withstand climate variability, including floods. Discussants also noted the need for these systems to fit into existing supply chains, and for upskilling and investment in local businesses to provide these products/services. For water supply, reflecting on the Pacific context, access to multiple drinking water sources is often critical to being adaptable, requiring the sector to shift from a focus on single sources for communities.

Environment and water resources	Across the 10 countries, the strongest element of WRM was infrastructure or management actions to protect or improve the quality and quantity of water resources. Inclusive decision-making related to water resources was rated weaker; only Lao PDR was seen as strong on this building block. Lao PDR's Ministry for Environment is responsible for climate change adaptation and response and allocates specific budget. In Nepal, this area of environment and water resources was noted as a threat to climate resilient WASH, citing cultural barriers that reduce inclusion and a lack of capacity. In Bhutan, hydrological data could be better linked to WASH services, and existing mechanisms such as source protection and water safety planning can be built upon with improved coordination. This is a fast-developing area in In India, with efforts being made to improve hydrological predictions so relevant authorities have advance notice of scarcity or flooding.

In summary, the findings of the SWOT analysis were:

- Some countries have embarked on policy integration between climate change and WASH policies but need support to translate these efforts to local levels; others are yet to do so.
- Although climate change demands increased coordination between environment and water resources ministries, this is not yet being achieved, and sector roles and responsibilities remain unclear in many contexts.
- Capacity to undertake WASH risk assessments and to develop responses are emerging but require support.
- Financing is an area of weakness, but opportunities to improve it exist, and particularly requires further attention to GEDSI and the differentiated impacts of climate change on vulnerable populations who often also have the least financial capacity to respond.
- Discussants highlighted the inadequacy of existing infrastructure to withstand or adapt to climate change impacts, and a need for new products and supply chains for low-cost, resilient hardware.
- Planning systems are starting to evolve to take account of climate risks, but corresponding monitoring systems are not yet in place to provide appropriate feedback on status of climate resilience of WASH services, climate risks and GEDSI aspects.
- Efforts to protect the quantity and quality of water are increasing, but greater coordination between actors managing water resources and the WASH sector is needed.
- User engagement was a perceived area of opportunity in multiple countries, particularly to support local level knowledge of climatic effects to inform local-level planning.

Water testing training in Solomon Islands
Credit: Live & Learn Environmental Education

Initiatives of regional and global partners

The analysis of regional and global partners' activities drew on data from stakeholder interviews. Development partners consulted included global organisations, regional organisations, sections of DFAT, Australia-based organisations and programs, and CSOs working outside Water for Women.

A range of organisational approaches to climate change, priority activities and initiatives, and strengths and gaps in the ways regional organisations are working towards climate resilient WASH in the Asia and Pacific region were identified. The analysis also identified key knowledge and capacity gaps and needs among Water for Women partners, and areas for and levels of interest in further collaboration.

Organisational responses to climate change

Many of the participating organisations are undergoing organisational structural change to better distinguish climate change aspects, rather than them being implicit in their operations. For example, some organisations are adding climate change expertise, creating a separate climate change division with dedicated staff members. Many organisations have invested in capacity building on climate change. Other initiatives relate to greening organisational operations through reducing their carbon footprint.

All participating organisations are putting greater emphasis on integrating climate change into programming, and for several organisations, climate change is a key strategic issue. The priority of water and WASH within this varies. The desire to increase and support meaningful participation and active engagement of local and national actors, and to improve risk assessments, are common themes in these strategies.

Several participating organisations were working to ensure project designs connect with climate risk concepts and accommodate climate change perspectives within program theories of change, from strategy down to implementation level. For instance, two organisations will soon require every project to undertake disaster and climate risk screening, and another is reviewing risk assessments in WASH programming. Other organisations have been establishing climate change action plans, frameworks and internal guidance to support climate change integration in WASH programming. Several programmatic initiatives related to climate change have emerged, such as climate change-specific monitoring, evaluation and learning (MEL), knowledge management systems for climate change aspects, and climate risk assessment and screening tools for program design.

Several organisations have set targets for increased climate change investment/financing for WASH programming. One organisation's goal is for 35% of projects to be focused on climate change and its integration. The water sector was perceived to be able to achieve this target relatively easily. Another organisation is increasing its climate change investment to $100bn by 2030, with $34bn directed at adaptation (across all sectors; its water-related activities currently receive 40% of adaptation funding). DFAT has increased its commitment for climate change across the whole development assistance program to $2bn by 2025.

A climate change related focus group discussion with women from poor and marginalised households in Mahabu, Dailekh, Nepal
Credit SNV / Sangita Adhikari

Priority climate resilient WASH sector building blocks for development partners

Organisations were asked to identify the three building blocks that are the main focus of their WASH–climate change programming. Figure 1 shows the number of times each building block was mentioned; the two highest areas of focus for regional and global partners were "policy and strategy" and "infrastructure", with "capacity development" and "user and community engagement" next. Some organisations noted that building blocks for climate resilient WASH should be expanded to also include regional efforts, which are particularly important in some regions (e.g. Pacific) and for some aspects of the framework (Table 1) (e.g. policy and strategy, capacity development, planning, monitoring and review, environment and water resources). An overview of the work of different development partners in each building block is described in Table 4.

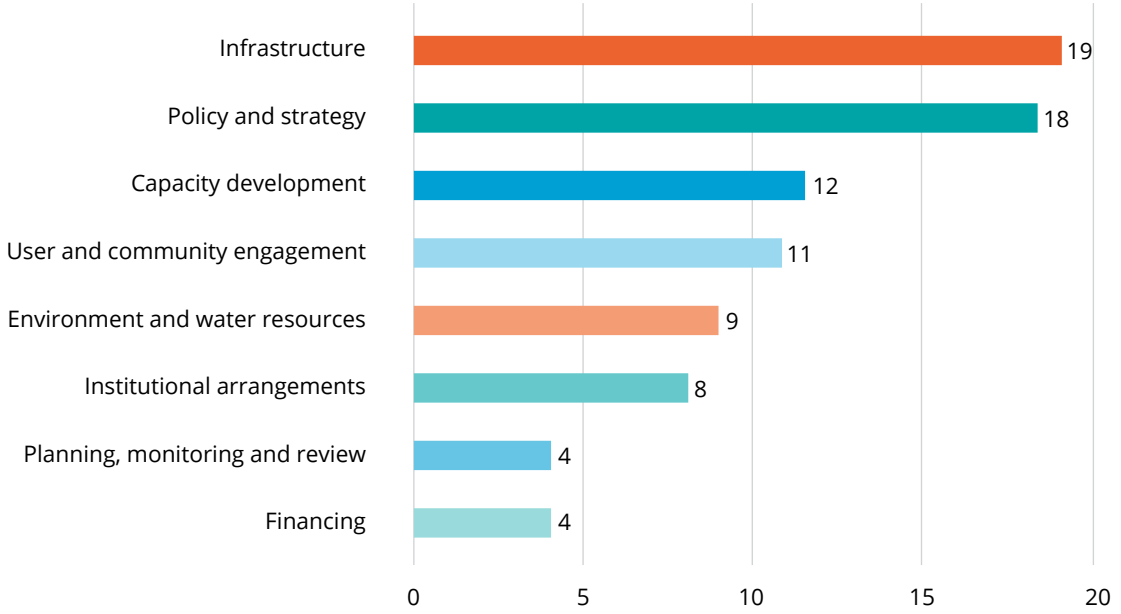


Figure 1. Priority climate resilient WASH building blocks for development partners, showing number of respondents reporting particular building blocks among their top three organisationally

In Village Ta Daok, Kampong Chhnang Province, Cambodia, situated in the Tonle Sap Lake region, households are significantly affected by changes in the climate and environment, including seasonal variation in water levels, heavy rainfall, and sporadic flooding
Credit: Water for Women / Miguel Jeronimo

Table 4. Overview of development partner focus on climate resilient WASH by building block

Building block	Overview of development partner level of focus
Policy and strategy	Organisations with a strong focus on this area are integrating climate change within WASH policy and strategy (and vice versa) at the national level. For instance, one organisation supported the establishment of the Framework for Resilient Development in the Pacific and works to improve coordination and shared learning between climate and WASH stakeholders. A focus on policy and strategy was also operationalised through organisations researching capacity and policy gaps to understand the current state of the integration of climate change in WASH policy/strategy and advance a strong climate rationale for WASH. Furthermore, some organisations have commenced work related to integrating WASH perspectives into NAPs and nationally determined contributions (NDCs) by creating a connection between WASH service provision and climate change.
Institutional arrangements (national or subnational)	Some organisations work to clarify the roles and responsibilities of institutions, including managing linkages between WASH and WRM. Clarifying institutional arrangements at national and local level is an activity connected to the "policy and strategy" building block.
Financing (national or subnational)	Regional/global organisations that prioritise climate finance focus on inclusion of WASH in NDCs and fostering WASH sector access to climate finance. Some donors are establishing new finance mechanisms to support climate resilience across multiple sectors (including WASH). For example, one organisation is establishing a fund for community-based resilience that will support women and other vulnerable groups.
Capacity development (national govt, sub-national govt, CSOs, rights holder organisations (RHOs), disaster management organisations (DMOs) and the private sector)	Capacity development focus is on improving capacity in climate risk identification, vulnerability and resilience assessments. This has been core business for some organisations in implementing climate resilient WASH programming, particularly in relation to water resources. Another area of focus is improving capacity for implementing adaptation responses beyond the physical adjustment of WASH facilities. Some interviewees believed there was a need to strengthen abilities in adaptive management and at subnational level.
Planning, monitoring and review (national and subnational)	Whilst part of most organisational approaches, climate resilient WASH planning and monitoring was generally a low-priority activity than other areas. However, one organisation is reviewing their definitions of climate resilience and setting parameters of what a program or project must do to ensure that it is climate resilient, including setting indicators to measure this. Several respondents pointed out gaps in local level monitoring of climate resilience of WASH services and the need for related definitions, metrics and methods.
User and community engagement	Organisations are prioritising working with local communities to build their awareness of climate change so they understand its implications for WASH and can adapt. Engaging public and civil society leadership in climate action is also a priority. For instance, global forums promote inclusion of civil society constituencies in processes, so that communities have a voice in WASH responses. In addition, one organisation noted the area of user engagement as a gap in terms of understanding differentiated impacts (women, men, people with disabilities).
Infrastructure	Many organisations prioritise development of WASH infrastructure that can withstand expected climate impacts (i.e., physical adaptation). Their work ranges from the provision of more durable WASH in Schools facilities and flood-resistant faecal sludge treatment to the provision of solar electricity generation for water supply systems.
Environment and water resources	Agencies that provide technical advice prioritise this building block. Several agencies are assessing climate change impacts on hydrological systems at basin and local scales and their links to WASH service delivery. In the Pacific, one organisation sees this as a critical area of need, and undertakes water resource assessments, especially of groundwater, using this information to help governments support vulnerable communities. One organisation suggested greater capacity in WRM is needed, and another organisation noted the need for nature-based solutions.

Development partner approaches to leaving no one behind in climate resilient WASH activities

The interviews confirmed that currently there are few examples of community-level activities that tackle the GEDSI aspects of climate resilient WASH programming. However, ensuring no one is left behind in climate resilient WASH is seen as important; some organisations have started to examine ways to connect their existing inclusion frameworks and methodologies (e.g., power analysis, the 'do no harm' framework, gender action plans, and integrated water management frameworks) to climate change and WASH. They see this as contextualising inclusion frameworks for climate resilient WASH programming in order to increase GEDSI perspective within programs.

Some organisations recognise the importance of engaging GEDSI expertise in climate change and WASH programming to improve design and implementation. Moreover, many organisations understand that COVID-19 has exacerbated exclusion and vulnerability, making it even more crucial that climate resilient WASH programs leave no one behind. However, few organisations have started collecting evidence about marginalised groups' experience during climate change-related disasters – or COVID – to inform GEDSI aspects of programming.

Climate mitigation in WASH initiatives

Most development partners focus their WASH work on adaptation and resilience rather than mitigation. An exception is an organisation that is developing a greenhouse gas (GHG) accounting mechanism that it will apply to its WASH programs.

Beyond WASH programming, interviewees mentioned advocacy activities and strategic objectives to reduce GHG emissions. Several mentioned internal efforts to reduce their organisational carbon footprints.

Multiple agencies are shifting to renewable (e.g., solar) energy for pumping water and powering other WASH services. One interviewee identified scope to increase methane capture from sanitation.

Another organisation is considering creating a fund for medium-scale service providers, including technical assistance for reducing non-revenue water. This organisation is also working with a partner on a catalogue of technologies designed to reduce GHG emissions.

Development partners' emergency WASH work

Most of the organisations interviewed were not humanitarian or emergency response organisations. However, many have some involvement in humanitarian WASH, and/or emergency response and longer-term WASH development. Examples include providing emergency grants, supporting information management during emergencies, and planning for building back better.

Among agencies that undertake humanitarian WASH at scale, there was clear acceptance of the importance of building back better, and of the need to implement this from the very beginning of an emergency response. They also acknowledged the importance of complementing other development work going on elsewhere in the country and are reportedly working to develop closer linkages between their internal humanitarian and development sections.

All interviewees accepted that humanitarian response is an opportunity to build back better, and that poor redevelopment can lead to further humanitarian problems.

New relationships or partnerships for climate resilient WASH

Many development partners form partnerships with complementary organisations to enhance their climate resilient WASH activities. Interviewees mentioned partnerships with research organisations, science agencies and technical experts to provide support such as climate projections, risk assessments, and water resource and flood modelling. One scientific organisation partners with a humanitarian organisation to work with volunteers for a citizen science water resources monitoring program. Few development agencies mentioned partnerships with country-based organisations such as government agencies, community-based organisations or RHOs. One interviewee spoke about developing partnerships between entities, such as a city water authority in the Global South and one in a Western city, to promote knowledge exchange.

Priority WASH sector knowledge and capacity gaps in responding to climate change

There was a very wide range of responses to a question about knowledge and capacity gaps, and a lack of consensus on priorities (e.g., finance, knowledge and capacity gaps, short-term disaster responsiveness). Some development partners identified a need for their staff and partners to be taught the basics of WASH and climate change, while others identified more specific technical needs:

- A common theme was making data and projections clearer and more actionable to delineate specific vulnerabilities at a local level and support water-related outcomes. However, capacity in risk assessment and vulnerability analysis was seen as a gap.
- Interviewees identified a gap in knowledge about how to invest effectively in climate resilience infrastructure, building better links between locally derived solutions and finance, and making sure that finance can meet needs and build climate resilient WASH.
- Several interviewees also spoke about harnessing indigenous/local knowledge, noting that there is enormous resilience and adaptive capacity, but development partners are not utilising it.
- There was interest in defining and demystifying climate resilient infrastructure and good practice in developing resilient systems.
- Training and capacity building in integrated WRM, including downstream effects and nature-based solutions, was seen as a priority.
- Improved water resource monitoring and capacity of development partners and local communities to jointly mitigate risks is a particular priority in the Pacific.
- Context-specific training and capacity building for government partners was cited, including in identifying gaps, needs and solutions; adaptive management; understanding vulnerabilities and differing impacts on women and men; and how climate change heightens existing vulnerabilities.
- Interviewees talked about the importance of monitoring climate resilience.

Future directions and priorities of development partners on climate change and climate resilient WASH

Analysis identified four dominant themes in development partners' responses about their future directions and priorities:

1. building stronger partnerships with local organisations for local solutions
2. focusing more on adaptation; both demystifying and accessing climate finance, and increasing emphasis on adaptation in policy
3. continuing support for WASH sector strengthening, especially focussed on resilient infrastructure and building local capacity
4. improving risk understanding and integrating this into programs.

As mentioned above, some development partners already have partnerships with complementary technical or specialist organisations. Several identified building up networks of partners as a priority, especially with local partners in developing countries (so-called 'forgotten' partners). Linked to this was the desire to strengthen WASH collaboration at country level, bringing together and coordinating with multiple actors, coordinating, and sharpening joint messages together.

Adaptation will be one of the key themes of the 27th United Nations Climate Change Conference (COP27) taking place in Egpyt in November 2022, yet development partners identified that there is still a lack of cohesion in priority messages on this topic coming from the water sector. Partnerships across sectors must be strengthened across multiple levels to fill this gap. Additionally, climate finance remains a mystery to many WASH actors. Numerous organisations expressed a desire to learn how to access adaptation finance, 'learn the language' of climate finance, and support developing countries to access this funding for WASH-related adaptation.

Development partners confirmed their intention to continue to focus on many aspects of WASH systems strengthening and how it applies to climate change. For the 'infrastructure' building block, this means working to ensure basic infrastructure is more resilient and sustainable. Some organisations prioritise vulnerable infrastructure such as low-lying wastewater treatment systems and are expanding this work beyond low-income countries.

Development partners recognise the risks of increasingly frequent and severe disasters and the need to make climate change part of all WASH projects (especially at the beginning of emergency response). More effort is needed at country level to ensure that this occurs, and specifically to measure climate risks and impacts in the sector and create clear guidelines for WASH programs.

Water for Women strengths and gaps

Thirteen Water for Women partner organisations working across Asia and the Pacific were invited to participate in an online survey of organisational priorities and needs relating to climate change adaptation and WASH.

Climate change mainstreaming

Partners were asked "To what extent has your organisation mainstreamed climate change in its strategies and operations?" and were given a definition of mainstreaming. Most (n=9) partners responded that mainstreaming in their organisation has commenced or is well under way, and two partners stated that climate change has been fully mainstreamed into strategies and operations (Figure 2).

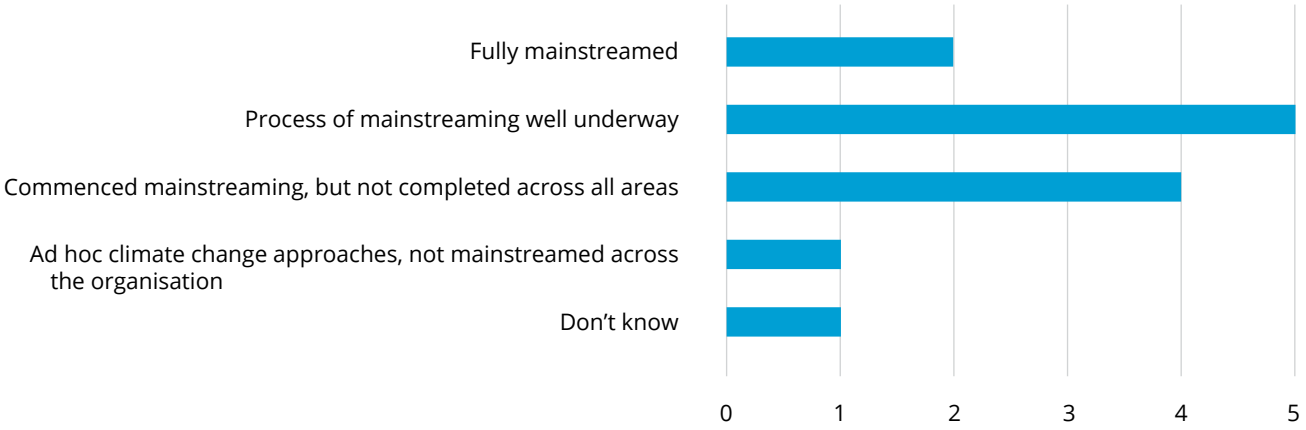


Figure 2. Number of partners reporting mainstreaming climate change into strategies and operations

Focus of climate change projects/programs

Partners were also asked to score themselves on a scale of 0 (not a focus) to 3 (significant focus) with respect to their organisation's projects/programs and each building block of the analytical framework (Table 1).

Figure 3 illustrates the relative levels of focus of the partners' work on the building blocks, as determined by their aggregated scores. It shows that the partners collectively scored "capacity development", "infrastructure", and "user and community engagement" highest in terms of focus. "Financing", "institutional arrangements", and "planning, monitoring and review" were scored lowest.

For each building block, there is substantial variation in partners' scores. Figure 4 shows how partners reported their level of focus on components of the "sector policy and strategy" building block.

Figure 3. Relative focus of partners' work on each of the building blocks

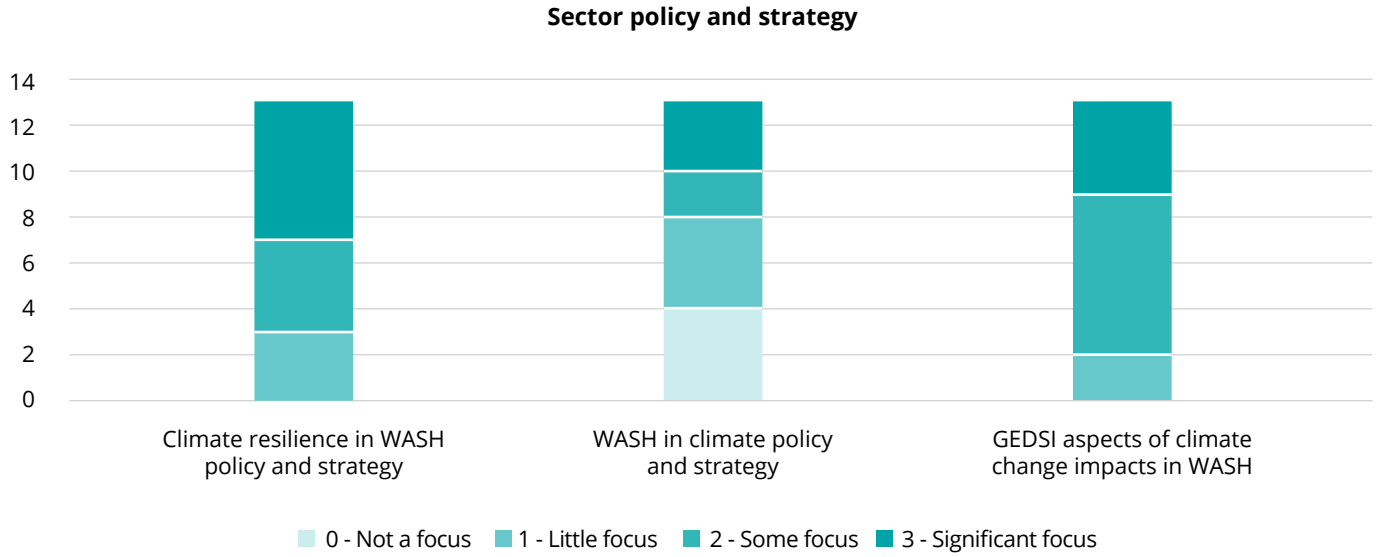


Figure 4. Partners' level of focus on components of the 'sector policy and strategy' building block

A more detailed breakdown of how the partners scored each building block is available in Annex 1. The charts in Annex 2 show that most partners have "some" or "significant" focus on "capacity building", "infrastructure", and "user and community engagement". For the "financing" building block, most partners reported "little" or "some" focus (hence, partners are not neglecting financing, but not placing significant focus on it). In other building blocks, the scores varied depending on the specific component within the building block, which highlights substantial nuance within each building block in terms of potential focus and learning.

Priority knowledge/capacity needs

Partners were asked to pick their top five priority knowledge/capacity needs for their organisation and for their partners (e.g., local governments, RHOs) from the framework building blocks. Table 5 shows the most frequently chosen needs they perceived for their own organisations, and Table 6 shows the most frequently chosen perceived needs for their partners. The complete list is shown in Annex 1. Despite most partners nominating "capacity development" as an area of focus (Figure 3), they identified this as their greatest need for both their own organisations and their partners.

Table 5. The survey participants' top needs

Top organisation needs (number of respondents selecting this need)
Capacity development: in climate risk identification, vulnerability and resilience assessments (5)
Financing: for pro-poor/GEDSI assistance in climate change response (5)
Planning, monitoring and review: Inclusion of climate data, risks, vulnerability assessments and adaptation responses in WASH plans (4)
Planning, monitoring and review: Inclusive planning and disaggregated MEL data on climate impacts on disadvantaged groups (4)

Table 6. The survey participants' perceptions of the top needs of their partners

Top partner needs (number of respondents selecting this need)
Capacity development: Capacity in implementing adaptation responses (6)
Planning, monitoring and review: Inclusion of climate data, risks, vulnerability assessments and adaptation responses in WASH plans (5)
User and community engagement: Awareness or behaviour change in users and communities about climate change, implications for WASH and adaptation responses (5)

Innovations being undertaken

Partners described a wide range of activities and innovations being undertaken to respond to climate change in their WASH-related work within Water for Women and beyond, including:

Engaging national and local governments

- supporting government actors to make informed decisions based on available evidence of impacts and climate data
- building leadership within government to take climate action
- working with national government to mainstream climate change into national WASH policies and strategies
- advocating to governments to prioritise climate resilient WASH
- building the capacity of local government actors to identify and respond to climate risks to WASH.

Innovations involving technology

- developing methods to assess the resilience of sanitation technologies
- installing desalination technologies in vulnerable coastal areas
- producing a compendium of sanitation technologies for challenging environments.

Initiatives at the community level

- developing risk assessment approaches that draw on local knowledge and available climate data
- facilitating communities to implement nature-based and eco-friendly solutions
- supporting communities to advocate for their rights to safe water despite climate impacts
- assessing the faecal sludge management behaviours of householders during floods.

Addressing financing

- supporting local government to budget for climate resilient WASH
- analysing the financial sustainability of climate resilient WASH infrastructure
- using blended financing approaches for resilience
- studying targeting subsidies and other in-house financing options to help vulnerable households access climate resilient WASH.

Undertaking monitoring, evaluation and learning

- assessing the climate resilience of sanitation systems at scale with resilience metrics
- monitoring water flow and storage in utilities
- measuring the resilience of WASH market systems
- building capacity of WASH stakeholders to monitor the effectiveness of adaptation in the medium and long term
- gathering data from communities about their lived experiences of climate impacts on WASH.

A focus on water resource management

- assessing water resources and planning for their long-term use
- supporting the use of recycled wastewater by utilities as a water conservation method
- drafting policy on water allocation under climate change
- engaging multiple stakeholders to make collaborative decisions on integrated water management.

Disaster preparedness and response

- implementing flood warning systems
- integrating WASH in DRR policy and vice versa
- working with local government to establish disaster preparedness structures and mechanisms
- supporting the community to effectively prepare for and respond to disasters.

Addressing GEDSI

Partners were given the option to add qualitative information on how their organisation addresses GEDSI and vulnerability in their climate-related work. Five partners noted that they undertake user and community engagement to learn the specific issues and concerns of vulnerable groups and to elevate their voices in community decision-making. For example, they use participatory rural appraisal techniques to help vulnerable groups to identify climate hazards and impacts and include vulnerable community members on water user committees that decide on climate adaptation actions. One partner added that they build the capacity of women and people with disabilities to become plumbers and gain knowledge of WASH infrastructure design.

Undertaking or supporting emergency WASH work

Partners were asked to provide qualitative information on how their organisation undertakes or supports emergency WASH work. Four partners responded that emergency response is a core component of their programming, including rehabilitating damaged infrastructure and providing emergency training. Two of these partners stated that 'build back better' was a principle of their emergency response but did not give examples. Three more partners stated that emergency response was not a core part of their programming, but they sometimes get involved in responding to major crises, such as the recent volcanic eruption in Tonga.

Three partners stated that they strengthen WASH emergency preparedness as part of their climate resilience work. Three partners gave examples of how they contributed to post-disaster recovery, for example, by assessing damage and installing handwashing stations.

Addressing climate mitigation

Partners were asked about any climate change mitigation activities they are undertaking in their WASH work. Seven partners indicated that they are exploring or promoting WASH technologies or nature-based solutions that reduce GHGs; these include on-site technologies like toilets with low emissions and centralised water utility facilities. One partner reported they are assessing GHG emissions from on-site sanitation systems and exploring synergies and trade-offs between resilience and mitigation for sanitation. Another partner is working with national government on policy and strategy development for reducing GHG emissions in the WASH sector. Finally, one partner has an initiative designed to reduce carbon emissions across all its operations.

Future directions and priorities

Partners provided information about the future directions and priorities of their organisations with respect to climate change. A common theme was increased coordination of WASH with other sectors (e.g., food security, DRR, agriculture, WRM) on climate resilience, mentioned by six partners. Four partners mentioned climate justice and inclusion as resilience priorities. Four partners stated that climate change is being established as a universal or cross-cutting theme across all their work.

Three partners stated they are focusing on climate resilient technologies and nature-based solutions. Another three partners are prioritising improved disaster preparedness for WASH.

Finally, financing or planning WASH and WRM links, capacitating WASH institutions to address climate change, development of monitoring tools and systems for climate resilience, and development of practitioner-friendly guidance materials on WASH resilience implementation were mentioned by two partners as initiatives being undertaken as priorities.

Preferred learning approaches and formats

For practitioners' needs related to climate change and WASH in the region, the e-discussants were asked: "How best as practitioners in the Asia-Pacific can we address these gaps at the scale and pace needed? What approaches to knowledge exchange, learning and skills development would help?" The responses covered a range of strategies, with key ones being:

- **Tailored capacity building** - for local governments and for private sector actors, including on planning needs and how the private sector can meet current market needs while also looking ahead to the future.
- **Regional exchanges and platforms** - for sharing of experiences across the Asia-Pacific, including the failures ('free from sugar coating').
- **Evidence generation** - practical evidence on scalable approaches to climate resilient sanitation provision, and evidence of effective and implementable policy prescriptions in other countries to share with policymakers.
- **Vulnerability assessments** - developing user-friendly, clear, well tested and vetted means for identifying climate vulnerability at the household, community, and national level. Ideally, these means for targeting could be used for prioritising implementation resources.
- **Public awareness and advocacy initiatives.**

Partners were asked in the online survey about particular types of activities that Water for Women could run as part of the Climate Change Learning Partnership under the Learning Agenda in 2022, and could choose up to three formats (Figure 5). Technical references materials were the most frequently chosen. E-discussions and academic publications were not chosen by any survey respondent.

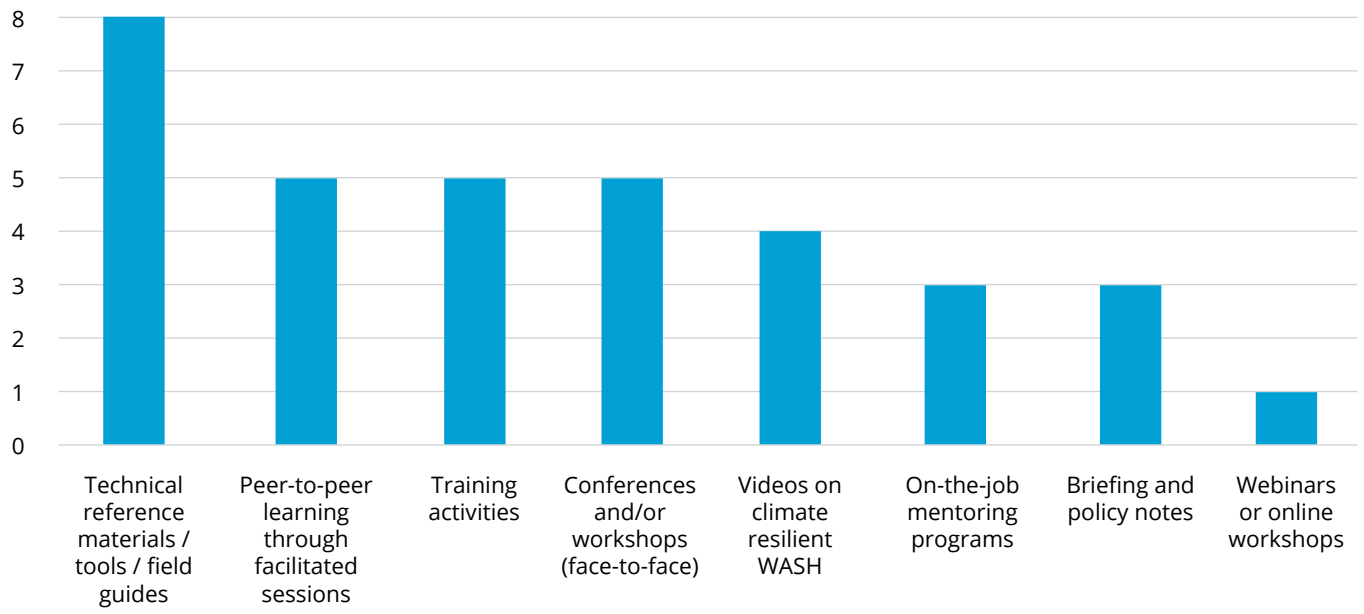


Figure 5. Preferred learning formats for inclusion in the Climate Change Learning Partnership under Water for Women Learning Agenda in 2022

Interviews with regional and global partners provided an array of responses to a question about the types of activities that best support learning. A dominant theme was the need to package activities and use multiple formats to meet multiple learning styles and needs. This need could be met by a range of learning approaches on the same subject, such as webinars and e-learning courses backed up with written materials, to allow people to learn in the way that they find most effective.

Collaborative and interactive activities (e.g., webinars, e-discussions) and/or studies were seen as other ways to involve multiple organisations and work collaboratively to support cross-learning. For example, e-courses/online training were mentioned as good methods of engagement at global and regional levels to support sharing and cross-fertilisation of ideas. Partnerships were seen as valuable but extremely resource intensive. It was seen as important to provide clear, actionable options, bringing in experienced people who have already implemented solutions, and are not just focused on discussing the problems. Written documentation was valued, particularly in short forms such as policy briefs.

An example of a successful initiative included:

- an effective learning agenda
- a wide and inclusive group of 80 organisations
- an e-learning course taken by organisations from each country at the same time, conducting their own case studies, to apply the learning together, with cases documented for the next cohort
- government-driven and hosted international learning exchange.

Organisations were asked to suggest ways in which they would be interested to collaborate. Ideas included co-hosting webinars, building up networks of partners, hosting experts to share experiences implementing new solutions, and connecting to other practitioners focused on adaptation and mitigation to share knowledge.

Recommendations for Water for Women contributions

The analysis presented in this report led to identification of seven areas of focus for a joint learning agenda. They relate to gaps in partner knowledge and capacity, contributions that could meet the needs of countries where Water for Women operates, and ways to complement the efforts of other agencies.

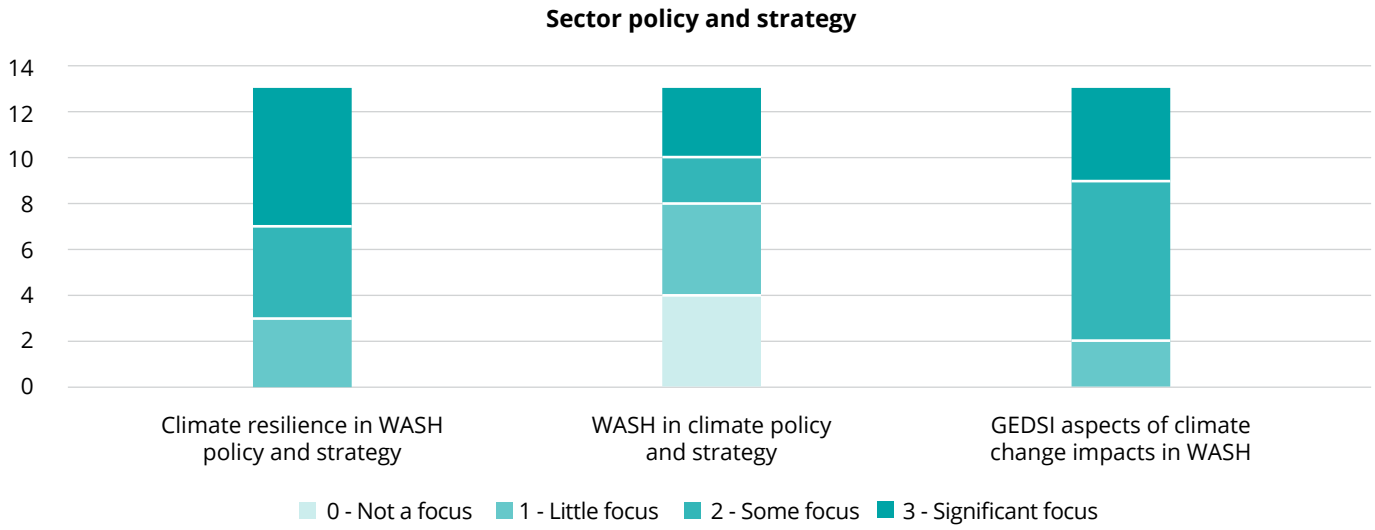
The seven areas are:

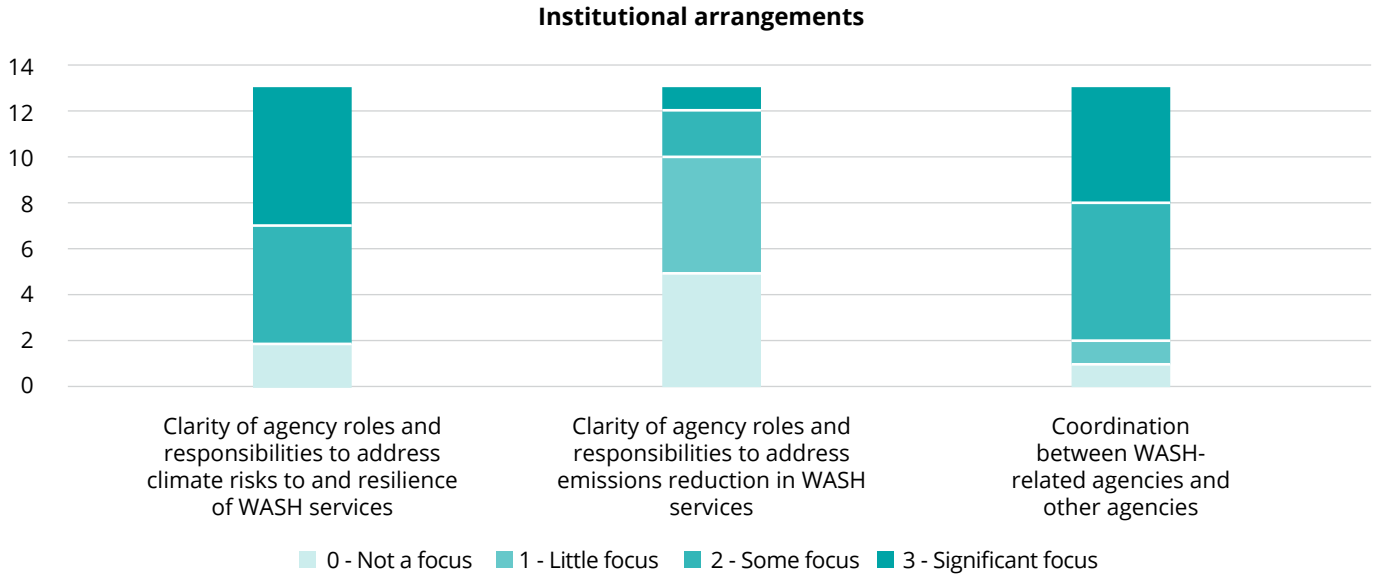
1. Developing capacity to build skills internally and among partners on climate risk identification, vulnerability assessments and resilience assessments.
2. Increasing understanding of climate financing opportunities and barriers for WASH, and developing a costing methodology for additionality.
3. Exploring nature-based solutions and bringing in external expertise to inform partners of the opportunities.
4. Developing monitoring and indicators for climate resilient WASH for local planning purposes.
5. Improving access to information on climate change and WASH through an online knowledge and resource hub.
6. Developing a tool for rapid assessment of WASH project climate resilience.
7. Developing a toolkit to help organisations engage with communities to harness local knowledge (that can be combined with scientific knowledge) and build bottom-up advocacy on climate change and WASH.

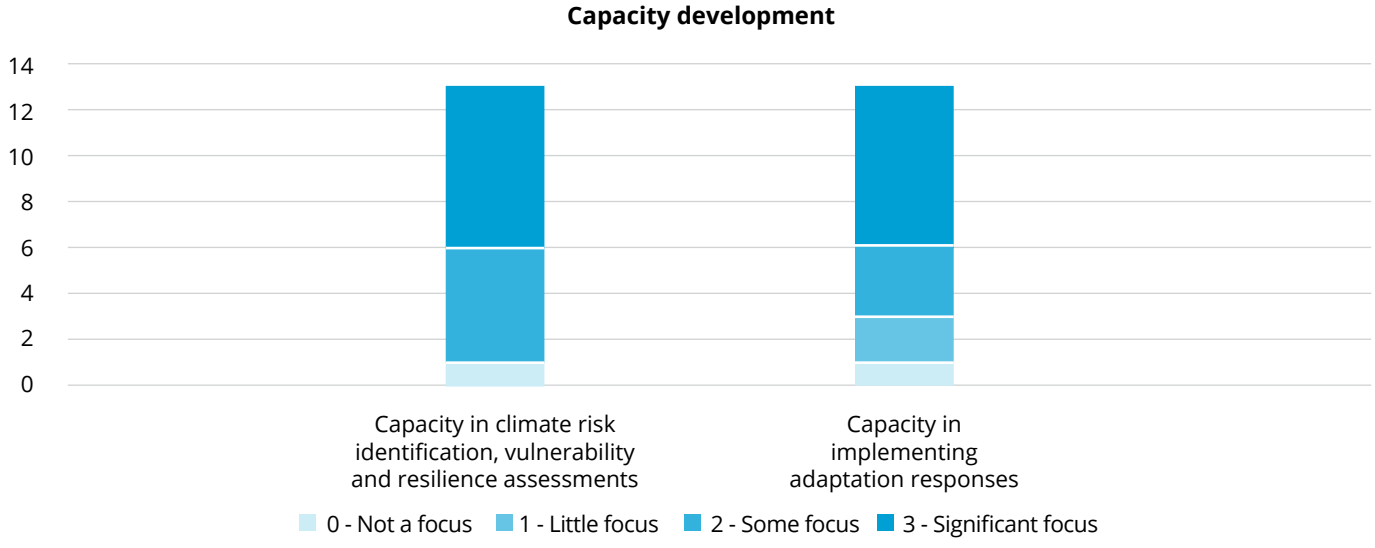
A participatory prioritisation process with agreed criteria was conducted among Water for Women partners to identify which of these should proceed in the short term (in 2022), with other options to be considered during the next phase of Water for Women (2023–24). As a result, the first four areas have been prioritised for implementation during 2022.

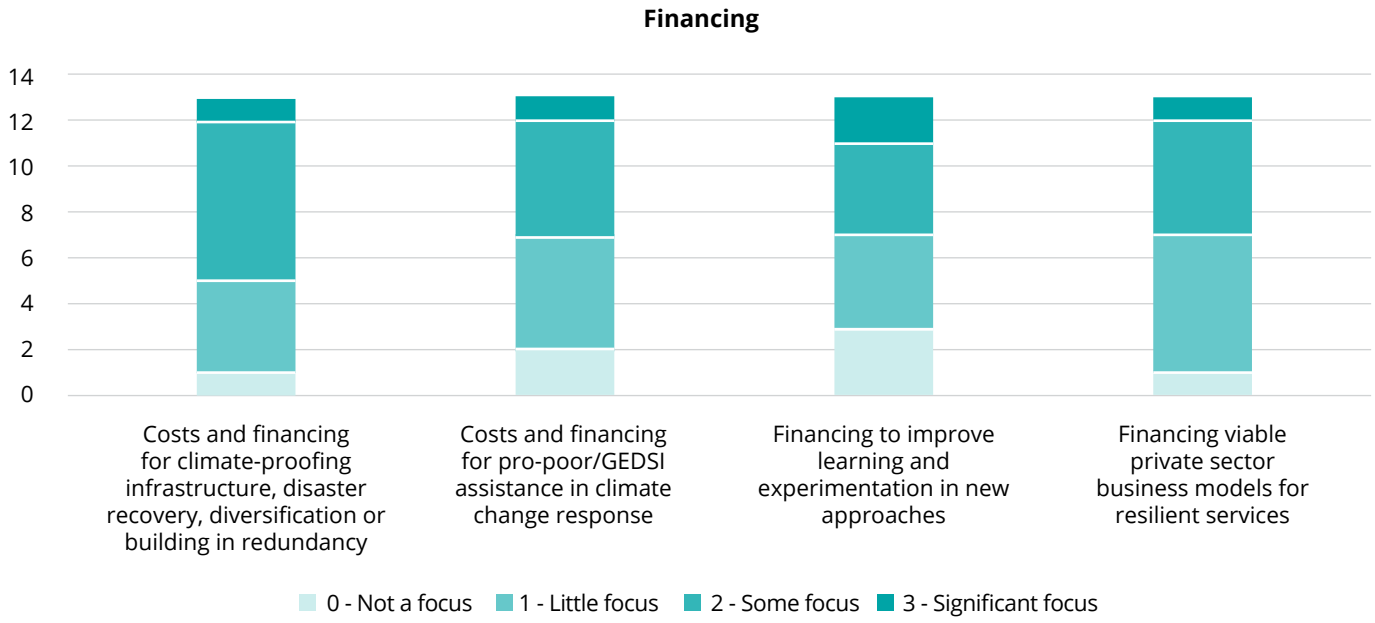
Annex 1. Partners' focus on climate resilience building blocks

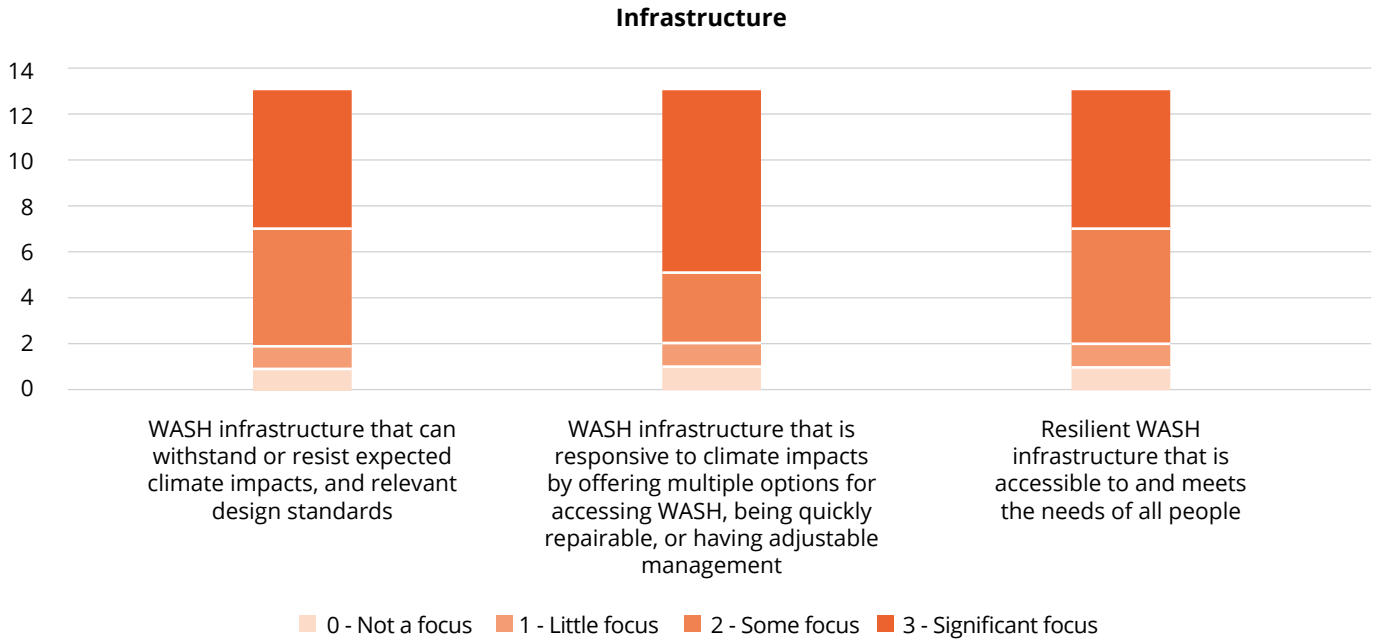
Partners (n=13) were asked to "note the relative focus of the work of your organisation in your projects/programs against the areas below." Each partner scored their focus on each of the building block components on a scale of 0–3.








Financing
14
12
10
8
6
4
2
0
Costs and financing for climate-proofing infrastructure, disaster recovery, diversification or building in redundancy
Costs and financing for pro-poor/GEDSI assistance in climate change response
Financing to improve learning and experimentation in new approaches
Financing viable private sector business models for resilient services
0 - Not a focus
1 - Little focus
2 - Some focus
3 - Significant focus


Infrastructure
14
12
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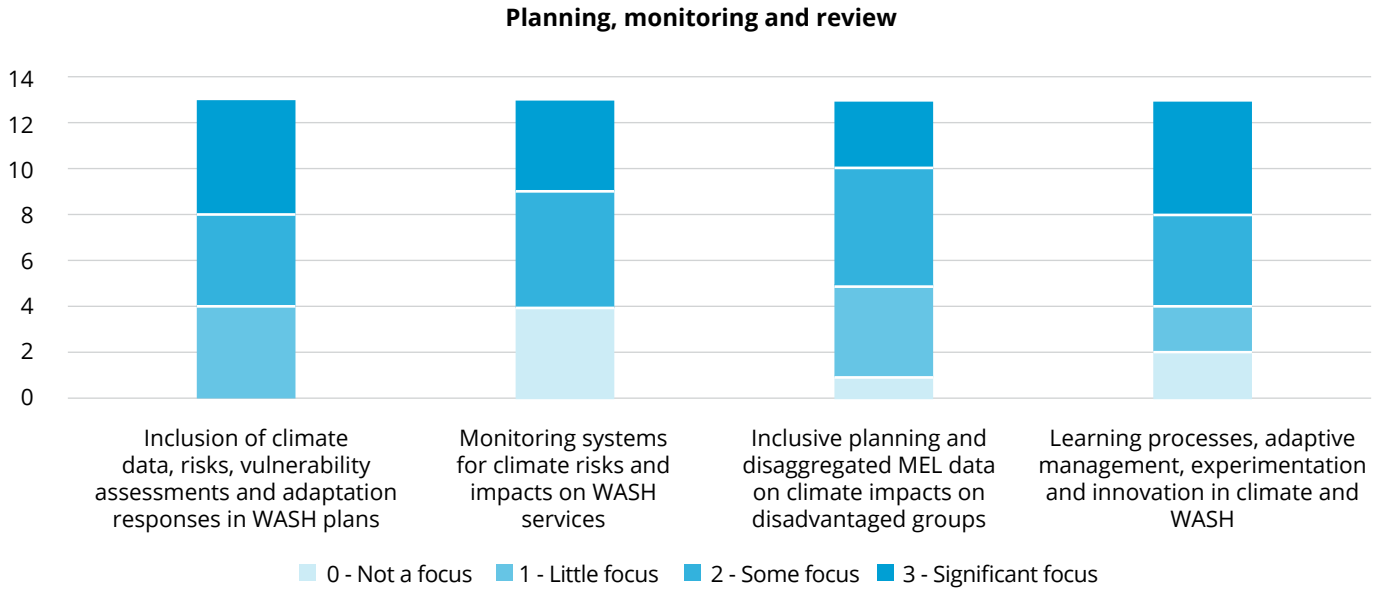
8
6
4
2
0
WASH infrastructure that can withstand or resist expected climate impacts, and relevant design standards
WASH infrastructure that is responsive to climate impacts by offering multiple options for accessing WASH, being quickly repairable, or having adjustable management
Resilient WASH infrastructure that is accessible to and meets the needs of all people
0 - Not a focus
1 - Little focus
2 - Some focus
3 - Significant focus


Planning, monitoring and review
14
12
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8
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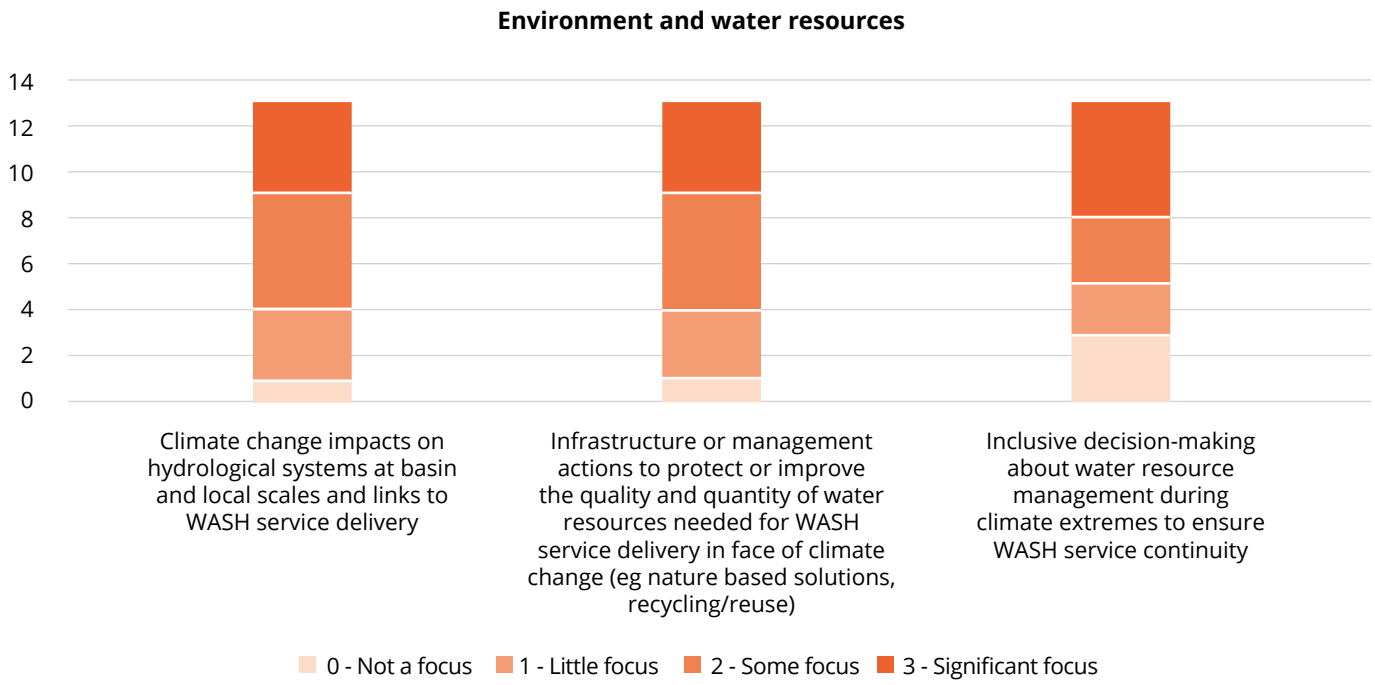
4
2
0
Inclusion of climate data, risks, vulnerability assessments and adaptation responses in WASH plans
Monitoring systems for climate risks and impacts on WASH services
Inclusive planning and disaggregated MEL data on climate impacts on disadvantaged groups
Learning processes, adaptive management, experimentation and innovation in climate and WASH
0 - Not a focus
1 - Little focus
2 - Some focus
3 - Significant focus


Environment and water resources
14
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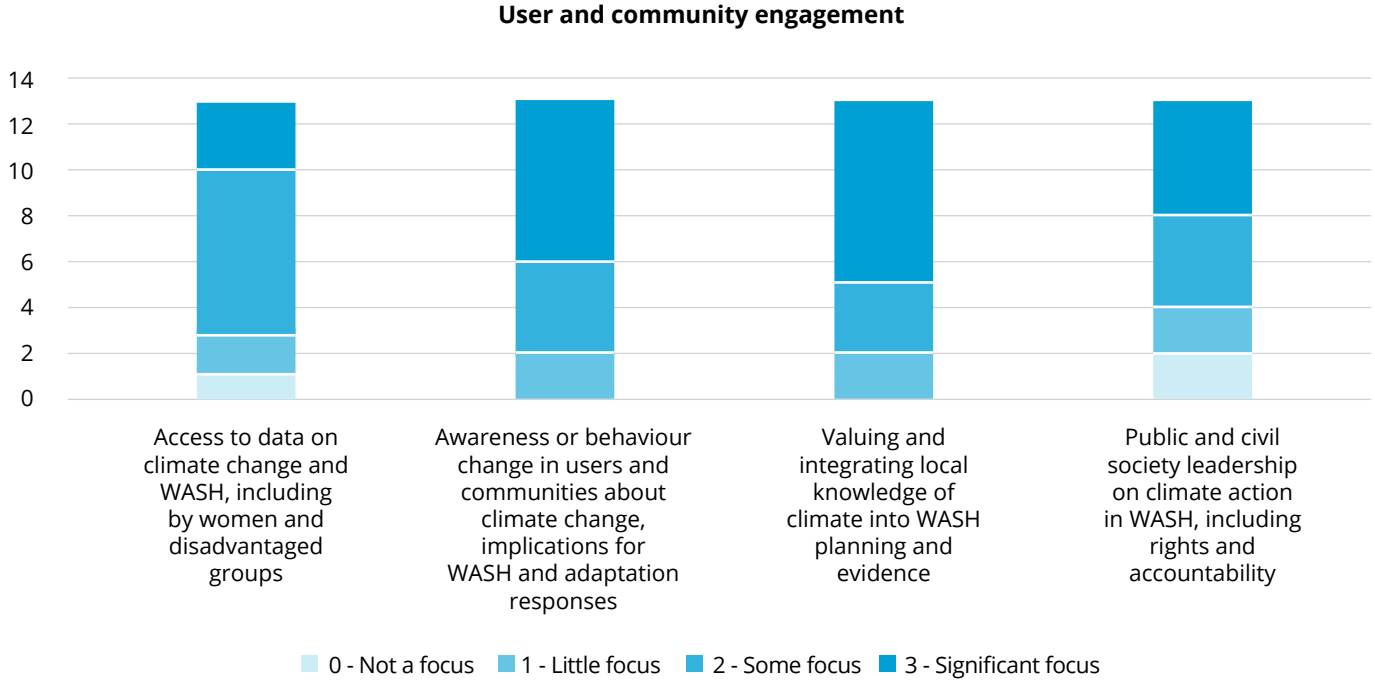
8
6
4
2
0
Climate change impacts on hydrological systems at basin and local scales and links to WASH service delivery
Infrastructure or management actions to protect or improve the quality and quantity of water resources needed for WASH service delivery in face of climate change (eg nature based solutions, recycling/reuse)
Inclusive decision-making about water resource management during climate extremes to ensure WASH service continuity
0 - Not a focus
1 - Little focus
2 - Some focus
3 - Significant focus


User and community engagement
14
12
10
8
6
4
2
0
Access to data on climate change and WASH, including by women and disadvantaged groups
Awareness or behaviour change in users and communities about climate change, implications for WASH and adaptation responses
Valuing and integrating local knowledge of climate into WASH planning and evidence
Public and civil society leadership on climate action in WASH, including rights and accountability
0 - Not a focus
1 - Little focus
2 - Some focus
3 - Significant focus

Annex 2. Partners' organisational needs and those of their partners

Partners (n=13) were asked to choose their top five priority knowledge/capacity needs for their own organisation and for their partners (e.g., local governments, RHOs). This table shows the frequencies with which each building block component was chosen.

Building block components		Organisation needs	Partner needs
Policy and strategy	Climate resilience in WASH policy and strategy	2	4
	WASH in climate policy and strategy	2	3
	GEDSI aspects of climate change impacts in WASH	3	3
Institutional arrangements	Clarity of agency roles and responsibilities to address climate risks to and resilience of WASH services	1	3
	Clarity of agency roles and responsibilities to address GHG emissions reduction in WASH services	1	0
	Coordination between WASH-related agencies and other agencies	2	4
Capacity development	Capacity in climate risk identification, vulnerability and resilience assessments	5	1
	Capacity in implementing adaptation responses	3	6
Financing	Costs and financing for climate-proofing infrastructure, disaster recovery, diversification or building in redundancy	3	4
	Costs and financing for pro-poor/GEDSI assistance in climate change response	5	4
	Financing to improve learning and experimentation in new approaches	2	1
	Financing viable private sector business models for resilient services	1	2
Infrastructure	WASH infrastructure that can withstand expected climate impacts, and relevant design standards	1	2
	WASH infrastructure that is responsive to climate impacts by offering multiple options for accessing WASH, being quickly repairable, or having adjustable management	2	1
	Resilient WASH infrastructure that is accessible to and meets the needs of all people	3	3

Planning, monitoring and review	Inclusion of climate data, risks, vulnerability assessments and adaptation responses in WASH plans	4	5
	Monitoring systems for climate risks and impacts on WASH services	2	2
	Inclusive planning and disaggregated MEL data on climate impacts on disadvantaged groups	4	0
	Learning processes, adaptive management, experimentation and innovation in climate and WASH	2	0
Environment and water resources	Climate change impacts on hydrological systems at basin and local scales and links to WASH service delivery	1	1
	Infrastructure or management actions to protect or improve the quality and quantity of water resources needed for WASH service delivery in the face of climate change (e.g., nature-based solutions, recycling/reuse)	3	1
	Inclusive decision-making about water resource management during climate extremes to ensure WASH service continuity	3	2
User and community engagement	Access to data on climate change and WASH, including by women and disadvantaged groups	1	2
	Awareness or behaviour change in users and communities about climate change, implications for WASH and adaptation responses	3	5
	Valuing and integrating local knowledge of climate into WASH planning and evidence	3	1
	Public and civil society leadership on climate action in WASH, including rights and accountability	2	1

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Water For Women

Building Climate Change Resilience and Adaptation in Inclusive WASH