



Climate resilient urban sanitation: State of the evidence and a collective learning agenda

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Achieving SDG6 in a Changing Climate



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Climate change impacts on urban sanitation are significant

- Multiple known climate risks to sanitation infrastructure and service delivery
- Flow-on health risks when services do not function
- Sanitation has been missing from climate policy dialogue

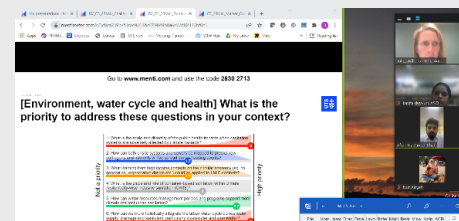
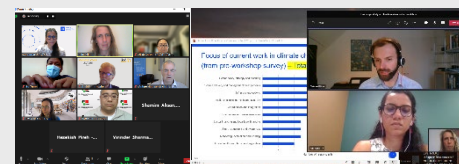
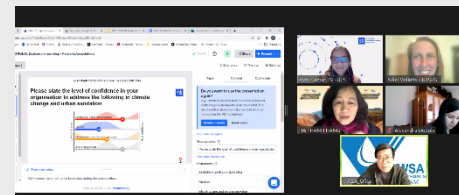
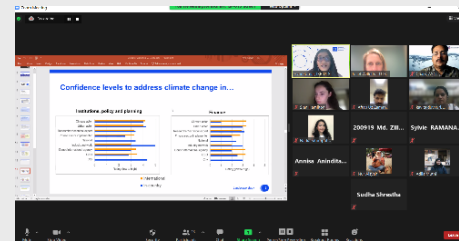


This landscape study describes current work on climate and urban sanitation, recent advances, challenges and developed a knowledge and learning agenda and implications for the sector.

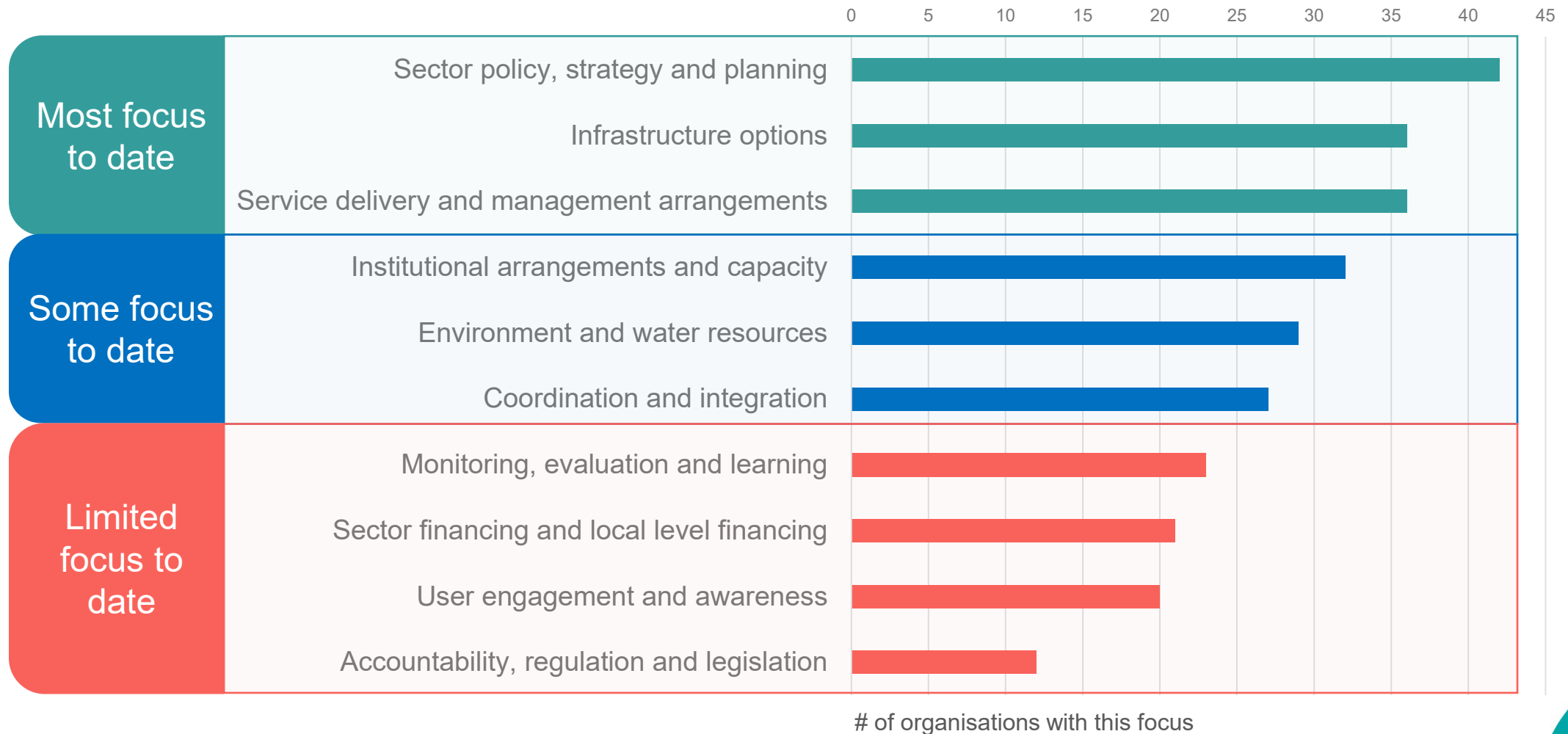
Funded by the Bill and Melinda Gates Foundation

The study took a qualitative, participatory approach, engaging over 60 organisations

- National and city-level actors, including utilities
- CSOs and NGOs
- Private sector implementors
- Research organisations
- Donor agencies and international organisations
- Industry associations and networks
- Climate actors
- Urban development actors



Which aspects of climate and urban sanitation are organisations focused on?



Key focus areas for climate resilient sanitation

1

INSTITUTIONS, POLICY AND PLANNING

- Policy integration of climate and sanitation
- Risk- and vulnerability- informed planning and wider urban development links
- Leadership and political will
- Institutional responsibilities



2

FINANCE

- Financing along the sanitation chain (households, service providers, city governments) for:
 - Preventive/adaptation measures
 - Disaster response



3

INFRASTRUCTURE AND SERVICE PROVISION

- Robust or repairable sanitation infrastructure
- Responsiveness and flexibility in service delivery and treatment operations
- Integration across urban water cycle, including drainage
- Monitoring for continual adaptation



4

USERS

- User engagement, awareness and capacity to cope and adapt
- Disaster response and support



There are many practical actions in progress

1

INSTITUTIONS, POLICY AND PLANNING

In **Zambia**, building political will to monitor sanitation-related GHG emissions and coordinate institutions on climate risk assessments.

In **Bangladesh**, institutional reform to better link disaster risk reduction, emergency response and sanitation.

Malaysia is formulating a national sewerage master plan with criteria and interventions that integrate climate risk.

For instance, mapping the climate risk vulnerability of urban areas to prioritise different zones and make decisions on the interventions needed for each zone.

There are many practical actions in progress

2

FINANCE

The **Water Authority of Fiji** is factoring climate risk costs in different parts of their work, including upgrading of their wastewater infrastructure.

In **Bangladesh**, a dedicated support cell at the national government level is linking government WASH departments to climate funders and providing support to prepare grant applications.

Use of carbon credits is being explored in relation to container-based sanitation based on emissions reduction.

There are many practical actions in progress

3

INFRASTRUCTURE AND SERVICE PROVISION

In **India**, city governments working on provision of scheduled desludging, which is beneficial in flood-prone areas.

In **Zambia**, provision of good onsite sanitation in drought-prone areas, which are reliant on groundwater.

In **Bolivia and Peru**, using GIS based tools to predict climate events and adapt urban planning including sanitation.

There are many practical actions in progress

4

USERS

In **Bangladesh**, Risk Communication and Community Engagement (RCCE) strategy for urban and rural sanitation

In **Zambia**, incorporating user experiences while designing flood-prone toilets and piloting these models in the community

In **Togo**, training community based organisations to manage sanitation infrastructure projects in climate vulnerable areas

Most significant challenges to achieve climate resilient sanitation



INSTITUTIONS, POLICY AND PLANNING

Lack of **coordinated policies** and wider coordination between climate, disaster and sanitation



FINANCE

Sanitation **budgets do not account for the costs of resilience** and adaptation (both increased capex and opex)



INFRASTRUCTURE AND SERVICE PROVISION

Lack of **understanding** on how to deliver climate resilient city-wide inclusive sanitation



USERS

Poor **use of data from households** and communities by local governments

A knowledge agenda for rapid action



Sharing experiences across countries and regions



Local level data collection by government and implementers



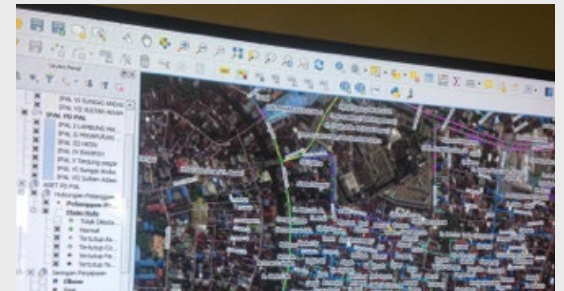
Combined implementation and research initiatives



Evidence to inform policy-development



Evidence to convince policymakers to invest in climate resilience



Academic research

Example learning agenda topics

Sharing experiences across countries and regions

- Examples of cross-sectoral coordination; successful and unsuccessful adaptation approaches

Local level data collection by government and implementers

- Impacts or damage on the sanitation chain in relevant climate events; Effects on people's lives, including of different groups (PWD, women, children etc.)

Evidence to convince policymakers to invest in climate resilience

- Numbers of people with low sanitation service level access and who frequently experience of climate hazards; scale and significance of public health impacts

Evidence to inform policy development

- Clarity on the financing costs, particularly the additional cost, for climate resilient sanitation in different climate contexts

Combined implementation and research initiatives

- In-situ implementation and evaluation of technologies and infrastructure in different climatic conditions; Initiatives to integrate water supply, sanitation and drainage

Academic research

- How can synergies and trade-offs in addressing mitigation and adaptation be optimised?

Four key actions for a way forward

ACTION 1

Engage with climate policy and better coordinate with urban resilience and other sectors

ACTION 2

Evolve policy and shift practice to incorporate climate risks and resilience

ACTION 3

Consolidate and continue to build the evidence base on climate resilient urban sanitation

ACTION 4

Facilitate rapid learning and capacity building on key risks and adaptation responses

Thank you to the many participating organisations

Asian Development Bank, Urban Climate Change Resilience Trust Fund (UCCRTF)	African Civil Society Network on Water and Sanitation (ANEWS)	African Water Association (AfWA)	Aguas De Portugal	Asian Institute of Technology (AIT)	Aquaya	Administrative Staff College of India (ASCI)	African Development Bank (AfDB)	Bappenas, Indonesia
BORDA Zambia	Bangladesh Rural Advancement Committee (BRAC)	Brilliant Sanitation Limited	Bristol University	British Geological Survey	Container Based Sanitation Alliance (CBSA)	Consortium for DEWATS Dissemination Society (CDD)	Center for Water and Sanitation, CEPT University	Department of Public Health Engineering (DPHE), Bangladesh
Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)	Eastern and Southern African Water and Sanitation Association (ESAWAS)	Ecole Polytechnique de Thiès Senegal	Green Climate Fund (GCF)	Global Green Growth Institute (GGGI)	GHD	Guam Waterworks Authority	ICLEI - Local Governments for Sustainability	IHE Delft Institute for Water Education
Indian Institute for Human Settlements (IIHS)	International Institute for Environment and Development	IMC Worldwide Ltd.	International Water Association (IWA)	International Water Management Institute (IWMI)	Kampala Capital City Authority (KCCA)	Kathmandu University	Kyambogo University, Uganda	Leeds University
Lusaka Water Supply and Sanitation Company	Manila Water	National Sanitation Office of Senegal (ONAS)	Practical Action	Programme Solidarité Eau (Ps-Eau)	Department of Sustainable Urban Planning and Development of Royal University of Phnom Penh	RTI International India	EAWAG Department Sanitation, Water and Solid Waste for Development (SANDEC)	Stockholm Environment Institute (SEI)
Stockholm International Water Institute (SIWI)	SNV - Regional, Bangladesh, Nepal	Solomon Island Water Authority	Stantec	Sustainable Sanitation Alliance (SuSanA)	Sanitation and Water for All (SWA)	Toilet Board Coalition	UN-Habitat	UNICEF - Global, Nepal
United Cities and Local Governments Asia Pacific (UCLG ASPAC)	USAID	Vietnam Water Supply and Sewerage Association (VWSA)	Water Authority of Fiji (WAF)	WASH Institute, India	WaterAid UK	World Health Organization (WHO)	The World Bank	Water & Sanitation for the Urban Poor (WSUP) - Global, Bangladesh, Madagascar

Thank You



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