SANITATION AND WATER FOR ALL

SWA PARTNERS' CLIMATE COMPENDIUM

Building Climate Resilience:
SWA Partners' approaches to jointly develop and implement sustainable solutions

RACE TO RESILIENCE

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FOREWORD BY THE CEO – SANITATION AND WATER FOR ALL

> **Indeed, the partnership plays a key role in coordinating sector efforts to connect water, sanitation and hygiene (SDG6) and climate action (SDG13).**

Catarina de Albuquerque,
CEO, Sanitation and Water for All

Water and sanitation are recognized by the United Nations as human rights, reflecting the fundamental nature of these basic needs in every person's life. Lack of access to safe, sufficient and affordable water, sanitation and hygiene facilities has a devastating effect on the health, dignity and prosperity of billions of people, and has significant consequences for the realization of other human rights, as well as social and economic development. That is why the human rights to water and sanitation are one of SWA's Guiding Principles, and at the core of our partnership's work.

Climate change and extreme weather events damage water, sanitation and hygiene services. This poses a significant threat to the fulfillment of human rights to water and sanitation. It also jeopardizes decades of progress – not only towards the Sustainable Development Goal (SDG) on safe water and sanitation, but also multiple other SDGs, such as those related to education, health, poverty, gender equality, energy, and sustainable cities and communities. Furthermore, it is clear that climate change significantly impacts conflict, migration and economic development.

The latest Intergovernmental Panel on Climate Change Assessment Report underlines the importance of multi-actor collaboration to combat the effects of climate change. It states that "key barriers to adaptation are limited resources, lack of private sector and citizen engagement, insufficient mobilization of finance (including for research), low climate literacy, lack of political commitment, limited research and/or slow and low uptake of adaptation science, and low sense of urgency."

The SWA global multi-stakeholder partnership is uniquely placed to mobilize its partners to collaborate on achieving the SDGs – including on how effective climate action can be reflected in the partnership's work. Indeed, the partnership plays a key role in coordinating sector efforts to connect water, sanitation and hygiene (SDG6) and climate action (SDG13).

The partnership has increased its focus on climate action in recent years, both at a global level, as well as in its support to country partners. SWA contributes to the success of the Paris Agreement by providing inputs to global climate platforms and initiatives, such as the Race to Resilience led by High-Level Climate Champions, and by working with more than 15 country partners since 2021 on how to integrate climate action with their efforts to increase access to water, sanitation and hygiene services.

This climate compendium, with over thirty practical case studies, outlines the power of multi-stakeholder action on climate. It shows how partnerships between governments, civil society, private sector, external support agencies and researchers can help to mobilize and coordinate the action on realization of the human rights to water and sanitation in a rapidly warming world. SWA stands ready to support partners in achieving climate-resilient water and sanitation services. We are all in this together in order to create more sustainable societies for current and future generations.

FOREWORD BY UN CLIMATE CHANGE HIGH-LEVEL CHAMPION FOR COP27, EGYPT

> **This Compendium of solutions, which provides case studies from Togo to Peru, showcases the leadership of drivers of climate action in the water, sanitation and hygiene sector. These solutions change lives and reduce vulnerabilities, while accelerating global climate action byplacing water and sanitation at the forefront of mitigation, adaptation, and resilience-building efforts.**

H.E. Dr. Mahmoud Mohieldin,
UN Climate Change High-Level Champion for COP27, Egypt

The climate crisis is already having a devastating impact on water, sanitation, and hygiene services worldwide. Over two billion people reside in water-stressed countries today, and this number is projected to surge to five billion by 2050. The far-reaching impacts of the climate crisis disproportionately affect the world's most impoverished and vulnerable communities, with 3.5 billion individuals lacking access to safely managed sanitation.

As the urgency to build adaptation and resilience to climate risk intensifies, non-state actors have emerged as crucial players in scaling and delivering resilience solutions for water, sanitation and hygiene. These actors are working closely with governments, UN agencies, and financial institutions to implement innovative and people-centered approaches.

The Race to Resilience campaign is proud to have Sanitation and Water for All as a partner, being the largest global platform of stakeholders dedicated to achieving the Sustainable Development Goals' water and sanitation targets. Together, we are in the race for a healthier planet, where climate-resilient, accessible water, sanitation and hygiene services not only safeguard lives but ensure the world is on track to achieve the Paris Agreement.

This Compendium of solutions, which provides case studies from Togo to Peru, showcases the leadership of drivers of climate action in the water, sanitation and hygiene sector. These solutions change lives and reduce vulnerabilities, while accelerating global climate action by placing water and sanitation at the forefront of mitigation, adaptation, and resilience-building efforts.

I call upon SWA and all relevant stakeholders to contribute to implementing adaptation outcomes within the water and human settlements impact systems of the Sharm El Sheikh Adaptation Agenda launched by the COP27 Presidency and the UN Climate Change High-Level Champions at COP27 as a comprehensive and ambitious plan to enhance adaptation and resilience for billions of people worldwide.

INTRODUCTION

One of the most immediate and obvious impacts of climate change is its effect on the water. Increasing droughts, floods, melting ice and rising sea-levels are already affecting communities around the world. Climate change also increases the frequency and intensity of extreme weather events.

In relation to this, the most recent assessment by the Intergovernmental Panel on Climate Change confirms that climate change has already altered freshwater ecosystems and has had diverse adverse impacts on human systems, including on water security and food production, health and well-being, and cities, settlements, and infrastructure - including water, sanitation and energy systems. These are causing rising societal inequities, social unrest, displacement and conflict.

These are sobering realities. However, there are solutions available. We can – and must – take action to accelerate partnerships and cooperation between the water and climate communities. Such collaborations can yield clear benefits: to freshwater ecosystems, to water and sanitation services, and to the most exposed and vulnerable people. They can also deliver cost savings, job creation and economic opportunities across many other sectors.

This requires both the scaling up of existing partnerships and the forging of new ones. These must reflect the broadest possible range of stakeholders, and should exist at local, national, basin, and global levels. Platforms and mechanisms for cooperation should be formed and strengthened through multi-stakeholder processes. Multi-stakeholder processes are at the heart of SWA's approach; they ensure that youth, research and learning institutions, the private sector, civil society and other sector voices can play a key role, supporting effective government leadership. This multi-stakeholder culture which SWA has always encouraged in the water and sanitation sector paves the way for more effective collaboration with other sectors - making it easier to reach out to stakeholders with expertise in climate action, health, gender, food, energy, and more. These efforts also present opportunities to further engage and align commitments with a view to strengthening mutual accountability for delivering on both climate and water-sanitation related goals.

Ensuring that water and sanitation services can withstand climate stresses requires the broadest possible coalitions of experience and skills, because successful adaptation and mitigation go beyond considerations of technical, structural measures. This means that it is essential to work on enabling environments for the sector. To this end, the SWA partnership works to bridge the water, sanitation and hygiene and the climate agendas using the following thematic areas:

POLICY AND STRATEGY: to ensure that climate change policies and strategies consider water and sanitation, and vice versa. This ensures coherence between climate and water-sanitation policy and guiding programmes and interventions towards building more resilient services. It also relates to how development partners work to evolve their own organizational policies and practices to strengthen climate resilience of water, sanitation and hygiene service provision.

COORDINATION: to assess and help develop coordination mechanisms between departments and key stakeholders responsible for climate and the environment, and water and sanitation. The aim is to bring together a diverse range of stakeholders with different mandates and values to address the climate challenges through innovation and joint programming.

ACCOUNTABILITY: to support the creation of effective mechanisms for citizen participation (for example through civil society organizations) and support effective systems to monitor climate change adaptation and mitigation national targets, and other international commitments related to water and sanitation. The aim is also to strengthen capacities at community level, especially of women and girls, and to create opportunities for bottom-up accountability and sustainability of services. Moreover, the SWA partnership puts its Mutual Accountability Mechanism at the disposal of all sector actors to make climate-related commitments.

FINANCING: to encourage the setting of national priorities for risk management, adaptation, and mitigation within the sector (for example, through developing sector financing strategies), which can enable the more effective consideration of adequate and innovative financing mechanisms.

These four thematic areas form the basis of the structure for this Compendium.

RATIONALE

The objective of the SWA Partners' Climate Compendium is to offer a comprehensive showcase of the latest initiatives to strengthen links between water, sanitation, hygiene and climate action across the partnership.

The Compendium highlights the critical importance of systems strengthening where adequate policies, plans, institutions and resources are in place to ensure the right solutions are adapted. This is at the heart of the SWA partnership's work in fostering government-led and inclusive responses to climate challenges. The case studies featured in the Compendium focus on experiences of SWA's non-government partners, such as civil society organizations, external support agencies, research and learning institutions, the private sector, and sector utilities. However, in most cases these experiences were implemented jointly with government. As such, it aims to show how SWA provides a marketplace of ideas and actions for its partners and beyond, and presents water, sanitation, and hygiene as a key that can unlock many issues related to climate.

The Compendium is a resource, showcasing practical approaches that will complement SWA's communication materials for partners, potential donors, and policymakers. The collection is carefully curated to ensure diversity of themes and regional representation. It is also a living document to which new experiences can be added by the SWA partnership.

Photo credit: Anjani Kapoor

CASE STUDIES

Policy and strategy

Photo credit: Sebastian Rich

CASE STUDY

'Water Tracker' tool enhances climate planning in Costa Rica

THEMES: **civil society, adaptation, resilience, Costa Rica**

In Costa Rica, the Water Tracker, created by the Alliance for Global Water Adaptation (AGWA), is having a significant impact on climate planning. Its analysis provides recommendations for revisions to key climate policy documents, such as the country's National Adaptation Plan, and the National Integrated Water Resources Management Plan, which considers climate threats that impact access to water resources. The Water Tracker has been designed to promote the concept of water-centric adaptation and resilience across various ministries, ensuring that national climate planning instruments are meaningful, ambitious, and effective. The analysis done through a self-assessment questionnaire and a guidance document has led to the inclusion of water, sanitation, and hygiene in climate policies, ensuring that holistic climate strategies are put in place.

Through the Water Tracker analysis, it has been demonstrated that water resources are well integrated within climate instruments and that water-related climate impacts are also well documented. Climate plans and policies now include the need for adaptation in the water, sanitation and hygiene sector, including developing a first set of sector adaptation guides, and the inclusion of water and sanitation services in protocols for responding to extreme events, such as floods and drought. The Water Tracker has also identified gaps in the policies, such as low prioritization of water-related risks (too-much or too-little water) and a lack of linkages between water, climate, and other sectors. These findings led to an action plan for increasing water resilience in national climate planning instruments, and to capacity building within government for the effective implementation of those plans and policies.

The Water Tracker can be used as a powerful evidence tool to advocate for integrated water and climate policies across ministries, and to inform holistic policies to achieve national targets.

"[Costa Rica] believes that mainstreaming climate change adaptation into regional planning is allowing us to build bottom-up solutions through processes where the voices of multiple stakeholders in the territories and key sectors of local development are heard...[Costa Rica has] been able to work with the Water Tracker tool to enable us to make an assessment that will help us improve and align the different climate plans in Costa Rica and develop bankable, water-resilient projects, and support our Paris commitments."

H.E. Cynthia Barzuna Gutiérrez,
Former Vice Minister of Water and Oceans, Costa Rica

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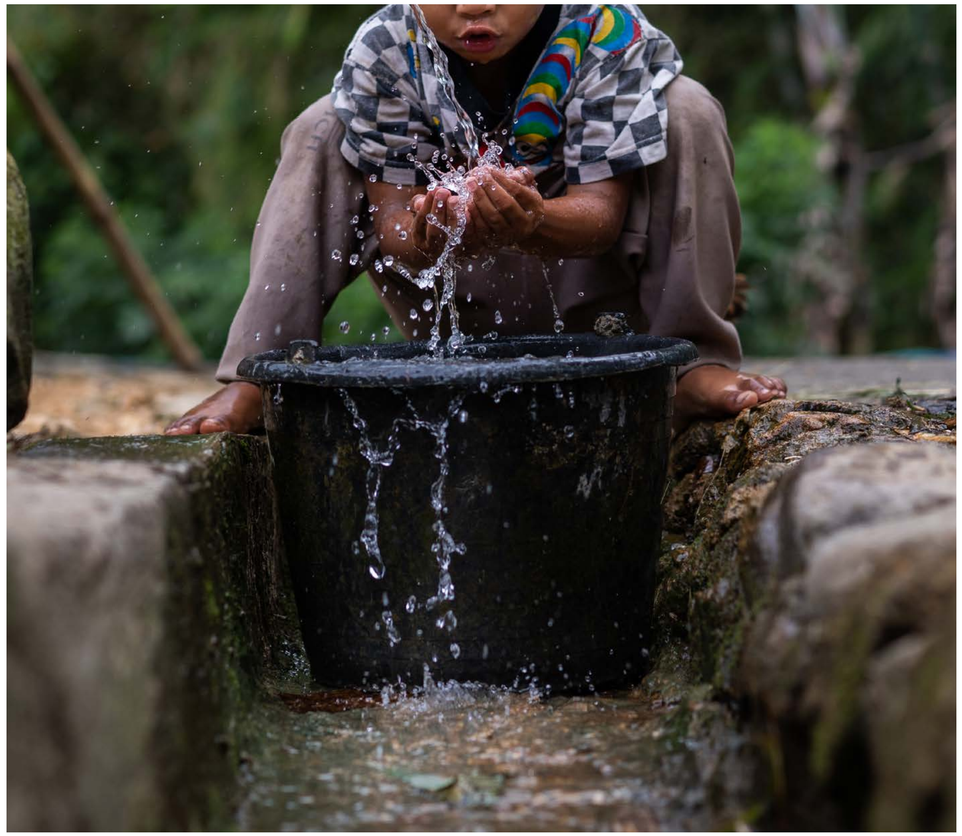

CASE STUDY

Indonesia's commitment to a climate resilience framework for water, sanitation and hygiene

THEMES: **research and learning, external support agencies, climate resilience, Indonesia**

A recent study conducted by UNICEF, University of Technology Sydney (UTS), and Universitas Indonesia (UI) has created momentum for the Government of Indonesia to develop a climate resilience framework for water, sanitation, and hygiene. The study examined the impacts of climate hazards on sanitation systems in four cities and triggered adaptation responses with relevant local governments.

This multi-city study provided evidence of the significant impacts of climate hazards on households and service providers along the sanitation chain. The four locations (Bekasi, East Lombok, Makassar, and Palu) had experienced drought, flooding, sea-level rise, or storms. More than 400 households participated in surveys, as well as 38 women and men taking part in focus group discussions. In addition, 12 service providers were interviewed, observations made of services and treatment plants, and more than 60 local government staff participated in interviews, inception and climate response workshops.

Climate hazards were found to strongly reduce sanitation access, use and function, and to pose a threat to achieving an open-defecation-free Indonesia. However, the research highlighted that sanitation is not integrated within climate policy. The research also demonstrated heightened stress and discomfort meeting defecation needs during climate hazards, including for women, children, and vulnerable households.

Climate impacts on sanitation risked increasing contamination of water supply and waterways, while flooded drains and inadequate water also limited sanitation use and function. Local government agencies were starting to adapt and take initiatives to prepare or respond, however more systematic action was required.

The recommendations for action at national and local level focused on four areas:

- **Clarify institutional responsibilities, governance, and service delivery arrangements to enable flexibility and alternative sanitation options, and ensure planning informed by risk and vulnerability analysis.**
- **Provide responsive financing covering proactive adaptation measures and accessible funds for disaster response, prioritizing vulnerable groups.**
- **Strengthen user engagement to raise community awareness of climate change, and to support feasible actions at household level.**
- **Ensure there are relevant robust or repairable infrastructure options that can operate under a range of scenarios, given the uncertainty of climate predictions.**

Building on this study and informed by other processes, the Government of Indonesia is moving ahead with a new framework for climate resilience in water and sanitation services and applying this framework to different subsectors, to promote improved climate resilience of services.

Climate impacts on sanitation risked increasing contamination of water supply and waterways, while flooded drains and inadequate water also limited sanitation use and function. Local government agencies were starting to adapt and take initiatives to prepare or respond, however more systematic action was required.

Photo credit: Fauzan Ijazah

Houses and sanitation systems at the riverbank. The sanitation system has a strong relationship to the urban water cycle

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CASE STUDY

Incentivizing scale up and investment in climate-resilient sanitation

THEMES: **private sector, climate mitigation, innovation, reducing emissions**

Faecal sludge and wastewater are responsible for producing greenhouse gases like methane and nitrous oxide, which contribute to global warming. In fact, sanitation is estimated to contribute 2-6% of global methane emissions and 1-3% of global nitrous oxide emissions.

Container-Based Sanitation Alliance (CBSA) is working to harness the potential of container-based sanitation (CBS) to mitigate and adapt to climate change. CBS systems are toilets that collect human excreta in sealable, removable cartridges that are then easily transported to treatment facilities when full.

In 2020, CBSA developed a tool to measure CBS greenhouse gas emissions and found that CBS systems can significantly reduce global greenhouse gas emissions from sanitation. While methane and nitrous oxide emissions can form at any point along the sanitation service chain, they are most significant during containment and treatment. This means that sanitation systems which can quickly collect and treat waste, such as CBS systems, significantly reduce the anaerobic degradation that produces emissions. The measuring tool suggested that together, the four operators studied mitigated 45,000 tons of CO_2 equivalent, over the course of a year.

Not only do CBS systems reduce emissions, but they also provide resilience to communities living in areas facing flooding and water scarcity, by preventing contamination of water resources. The approach can be rapidly deployed to serve humanitarian contexts as well. Despite these advantages, climate-resilient sanitation solutions are yet to benefit significantly from climate finance.

Therefore, CBSA is exploring the potential of carbon credits to provide an income stream for climate-resilient sanitation providers. CBSA is developing a carbon credit methodology that will allow emissions saved by containment and treatment to be counted alongside other emissions reductions from treatment and the production of reuse materials.

The urgent need to address the climate crisis requires both widespread emissions reduction and investment in resilient solutions. Climate-resilient sanitation approaches like CBS have the potential to make a significant impact on reducing global GHG emissions.

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Containment	Emptying	Transport	Treatment	Reuse/disposal
A CBS toilet captures excreta in a sealed container.	When full, the container is exchanged for an empty, clean container.	Excreta-filled containers are sealed and transported to a treatment or disposal site.	Waste is removed, processed, and the containers are desinfected before reuse.	The most common methods of resource recovery are thermophilic composting, as well as the production of biogas, biomass fuel, and animal feed.
A CBS toilet is typically waterless and often portable. In most cases, a urine-diverting dry toilet is used to minimize the volume and weight of the container.	Service providers typically collect the full containers weekly or biweekly.	Single-stage transport places containers directly into a transport vehicle.	CBS waste is typically drier and contains less garbage relative to latrine and sewer waste.	
	Service providers are professionally employed to empty the toilets — reducing stigma and providing dignified work.	Two-stage transport uses push carts, then consolidates the containers at a collection depot before plaing them into a larger transport vehicle.	Waste processing can take many forms, from simple pathogen reduction to full resource recovery.	There remains potential to recapture nutrients such as nitrogen and phosphorus from urine.

CASE STUDY

Faecal waste management framework mitigates negative impacts of climate change on sanitation infrastructure

THEMES: **civil society, climate resilience, mitigation, Kenya**

The Kisumu County in Kenya has made significant strides in enhancing its urban sanitation infrastructure, through the adoption of Faecal Sludge Management Standard Operating Procedures (FSMSOPs). The FSMSOPs framework was developed by Population Services International (PSI) and has transformed faecal waste management across the entire sanitation value chain, from collection to treatment and disposal.

The FSMSOPs framework prioritizes sustainable and climate-resilient practices that mitigate the negative impacts of climate change on sanitation infrastructure, public health, and the ecosystem. Through the framework, stakeholders have gained the necessary skills and mechanisms to implement climate-resilient practices, including policy and regulatory framework development, capacity building of sanitation service providers, and promotion of innovative technologies and nature-based solutions in faecal waste management.

Notably, the FSMSOPs have built understanding of the impacts of climate change on urban sanitation, promoting the adoption of climate-resilient

technologies for resilient sanitation solutions. Through community involvement, the framework ensures that the needs of varied income areas within Kisumu County are considered in the implementation of climate-resilient sanitation measures.

The adoption of FSMSOPs has yielded numerous population benefits, including improved public health outcomes, reduced pollution of water bodies, enhanced resilience of sanitation infrastructure to climate change impacts, and the creation of green jobs within the sanitation sector. Moreover, the adoption of climate-resilient sanitation practices contributes to the overall sustainability and livability of urban areas, supporting the achievement of wider Sustainable Development Goals. The framework's success in Kisumu County serves as a replicable model for other counties – and countries – looking to make their urban sanitation infrastructure climate-resilient.

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CASE STUDY

Sanitation study shows potential for benefits and trade-offs in climate policy and financing

THEMES: **research and learning, climate mitigation and adaptation, evidence-based policy planning**

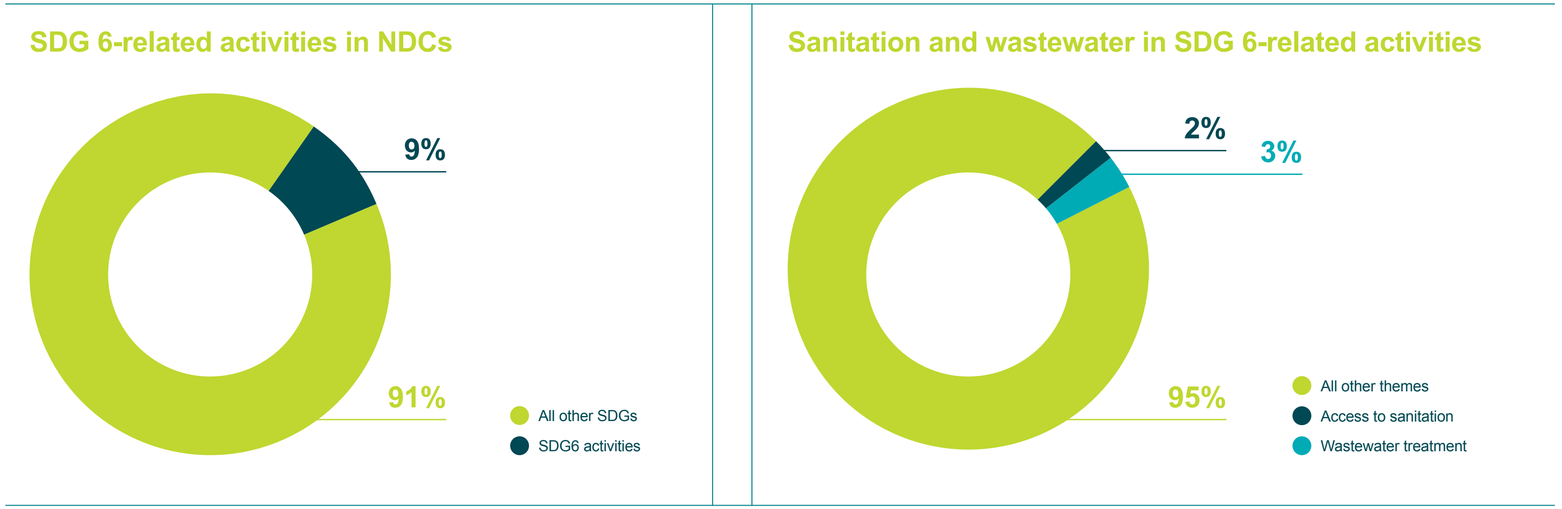
Sanitation has so far been only a minor component in climate adaptation considerations, despite playing a crucial role in public health. The existing sanitation systems are at risk due to climate change, which also hinders the efforts to improve services for the 3.5 billion people who do not have access. Additionally, sanitation and wastewater sectors directly produce emissions due to the breakdown of organic matter. The treatment processes, therefore, require large energy inputs.

In light of these challenges, the Stockholm Environment Institute (SEI) recently conducted a global study on the gaps in how sanitation is being addressed in climate change mitigation and adaptation, and the implications of these gaps for different sanitation systems and geographic regions. This study builds on SEI's previous and ongoing projects on sanitation systems analysis, resource recovery and reuse, climate finance tracking, and climate-resilient development pathways.

The study found that sanitation is overlooked in global climate policy and financing, despite its significant contribution to greenhouse gas emissions and its vulnerability to climate impacts. It found that integrating sanitation and climate action can generate multiple co-benefits for human health, well-being, the environment, and the economy, through reducing emissions, enhancing resource efficiency, improving service delivery, creating livelihood opportunities, and building resilience.

The study further highlighted potential trade-offs and barriers that must be carefully considered and addressed, such as increased costs, complexity, uncertainty, institutional fragmentation, and conflicting interests. Planning frameworks are needed to facilitate integration of climate change into sanitation policy and programming in countries. For instance, the 'Strategic Framework for WASH Climate Resilience' by the Global Water Partnership (GWP) and UNICEF guides actions to promote climate resilience in water, sanitation, and hygiene strategies. The WHO Sanitation Safety Planning approach (SSP) can be expanded to include climate considerations comprehensively. Adapting existing frameworks like the operational framework developed by WHO can also help address sanitation and draw on lessons from other sectors. These and other frameworks provide a good starting point, but more research is needed to adapt them specifically to a sanitation and climate focus, and to operationalize and evaluate the frameworks across different development contexts.

Countries and development partners can apply the outcomes of this study and recommendations to advance the knowledge base, policy dialogue, capacity development, and implementation support to ensure sanitation effectively contributes to climate action. Such frameworks can also contribute to exploring synergies in global agendas such as the Sustainable Development Goals, the Paris Agreement, the Sendai Framework for Disaster Risk Reduction, and the New Urban Agenda.



[Left] NDC activities related to SDG6- From Dickin, S., Bayoumi, M., Giné, R. et al. [Right] sustainable sanitation and gaps in global climate policy and financing. npj Clean Water 3, 24 (2020).

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CASE STUDY

Collaborative research reveals challenges and strategies for climate-resilient urban sanitation in Africa and Asia

THEMES: **research and learning, climate resilience, urban sanitation, evidence-based policy responses**

The University of Technology Sydney (UTS) led a collaborative research process that brought together over 60 organizations from countries in Africa and Asia to contribute to a study on urban sanitation and climate change. The research process involved city governments, utilities, national governments, donors, international agencies, private sector implementers, researchers, industry associations, as well as urban development and climate actors. The result was a report that highlighted the many ways climate change puts sanitation services at risk, and the likely public health and environmental impacts.

The report also revealed promising advances in institutions, policy, planning, financing, infrastructure, service provision, and user engagement in sanitation. For example, inclusion of sanitation in Nationally Determined Contributions (NDCs) in Nepal, use of climate data to inform sanitation responses in Zambia, linking disaster risk reduction and sanitation at national level in Bangladesh and incorporating climate risks into sanitation service planning in Malaysia. Despite these advances, the report identified significant challenges to progress towards climate-resilient sanitation. These challenges include lack of coordinated climate, disaster, and sanitation policies, and insufficient budgets to account for increased costs of responding to climate impacts and building resilience.

The report presents four actions and associated strategies to support efforts to improve climate resilience in urban sanitation, strengthen the argument for this shift and address key bottlenecks limiting progress:

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

The report provided a knowledge and learning agenda to support a rapid shift in practice to better account for climate change impacts. This included topics for sharing experiences across countries, informing policy development and advocacy, local-level data collection, academic research, and combined research and implementation initiatives.

Building on a series of events on urban sanitation and climate change led by UNICEF, UTS, UN-Habitat, WHO and World Bank, a Call to Action on sanitation and climate change has been produced. A coalition is forming of organizations taking the steps outlined in this landscape study and the Call to Action.

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CASE STUDY

WHO insights on developing climate-resilient sector monitoring sparks action in Bangladesh and the Philippines

THEMES: **external support agencies, climate-resilient monitoring, vulnerability assessment**

Photo credit: Santiago Arcos

Alongside UNICEF, the World Health Organization is responsible for sourcing and monitoring Sustainable Development Goal indicators on access to water, sanitation and hygiene services and the sector enabling environment. WHO is therefore well-positioned to provide guidance and support for developing climate-resilient monitoring for water, sanitation, and hygiene services.

Alongside UNICEF, the World Health Organization is responsible for sourcing and monitoring Sustainable Development Goal indicators on access to water, sanitation and hygiene services and the sector enabling environment. WHO is therefore well-positioned to provide guidance and support for developing climate-resilient monitoring for water, sanitation, and hygiene services. This includes assessing climate vulnerability and energy needs, monitoring the adaptive capacity of communities and service systems to climate and energy changes, and considering how to integrate these assessments into sector policies. Regular data collection and reporting are crucial for progress tracking and decision-making.

In several countries, guidance from WHO has been used to strengthen climate resilience in various aspects of service delivery. In the Philippines, WHO's 'Water and sanitation for health facility improvement tool' (WASH FIT) has been integrated into the country's Green and Safe Health Facilities manual, to help increase the climate resilience of healthcare facilities. A dashboard was also created using the tool in collaboration with UNICEF, to share real-time assessments of water, sanitation, and hygiene services in healthcare facilities. To date, more than 20 facilities have used the tool.

In Bangladesh, UNICEF and WHO's Hand Hygiene for All (HH4A) global initiative led to the government developing a HH4A country roadmap, outlining its ambition to deliver Hand Hygiene for All, in all settings. WaterAid supported a process to convene civil society organizations, the private sector and government representatives. This enhanced the coordination of the roadmap process across sectors, ensured the participation of vulnerable groups and increased the likelihood that decision-makers could be held to account for the commitments they made.

These examples show how guidance and data provided by WHO can be utilized to understand links between water, sanitation and hygiene and health to address the impacts of climate change. It is through increasing understanding of the interconnections between these three sectors, and how to apply them, that countries can enhance cross-sectoral alignment of their strategic development planning processes.

CASE STUDY

SafePani model addresses drinking water safety challenges and climate risks in Bangladesh

THEMES: **research and learning, climate risks, water quality, policy planning, Bangladesh**

By 2019, over 98% of the population of Bangladesh had access to improved drinking water sources. However, significant challenges to ensuring the safety of drinking water remain. Climate hazards often exacerbate these challenges, increasing faecal contamination, the concentration of other contaminants like arsenic and manganese, and salinity. According to 2019 Bangladesh Multiple Indicator Cluster Survey (MICS) report, around 40% of the population collect drinking water from waterpoints that have microbiological contamination, but the proportion of waterpoints that are contaminated increases with hot weather and rainfall, while others become inaccessible during floods or unusable in the dry season.

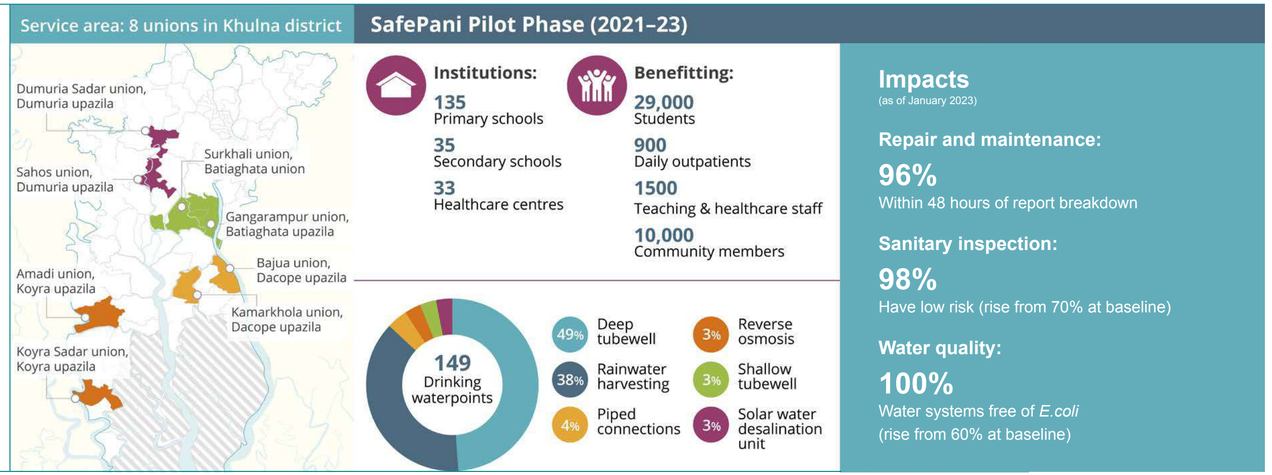
Additionally, an estimated 11% consume drinking water with arsenic concentrations above the national standard of 0.05 mg/L. To help mitigate and address these risks, Oxford University's SafePani model seeks to strengthen institutions managing rural water supply to communities, to improve water safety and lessen the impacts of extreme climate-related events.

The SafePani model was developed as part of the REACH research programme, which is led by the University of Oxford. The model reformed the existing institutional design, moving towards a professional water service delivery model. As part of the SafePani team in Khulna, the non-profit organization HYSAWA works as a professional service provider to ensure regular operation and maintenance, water quality testing and treatment, government and community liaison, engineering works, and project management. Actions include treating faecal contamination risks, improving flood resilience, and ensuring functionality of cyclone shelter waterpoints. All waterpoints are managed to be free from faecal contamination, with 96% of waterpoints repaired within 48 hours of reported breakdown.

The SafePani model also addresses climate risks through climate-resilient water safety planning in the coastal region, where over 20 million people face risks from increasingly saline aquifers, seasonal water scarcity, and faecal contamination, as well as flooding from the monsoon and cyclone storm surges. The success of this model demonstrates the potential for governments to work with research to address climate risks and provide institutional frameworks for improved policymaking.

As part of the SafePani team in Khulna, the non-profit organization HYSAWA works as a professional service provider to ensure regular operation and maintenance, water quality testing and treatment, government and community liaison, engineering works, and project management.

Photo credit: Sonia Hoque



CASE STUDY

Gender equality in water security and climate resilience in Uganda

THEMES: **external support agencies, climate resilience, capacity development, gender, Uganda**

The Mukirwa community in Uganda, located in the Kagera, Lake Victoria Basin, has long struggled with gender inequality and water security issues, which are further exacerbated by climate change. To address these concerns, a local community gender transformative project was designed as part of the Africa Water Investment Programme's Gender Transformative Water Climate and Development programme (AIP WACDEP-G).

The project aims to transform gender inequalities at scale, by building capacity so partners can promote gender-transformative planning, decision-making, and institutional development for climate-resilient water investments across the continent. Without addressing gender equality at the systemic level, investments in water infrastructure can significantly exacerbate gender inequalities.

In Uganda, WACDEP-G is operationalized through a collaboration between the Ministry of Water and Environment and the GWPEA Secretariat. A senior official from Uganda's Ministry of Water and Environment described the WACDEP-G programme as a timely intervention.

"The AIP WACDEP-G programme is fundamental to Uganda's socio-economic development because integrating gender equality in all our programming as the national Ministry of Water and Environment is essential for ensuring water security and developing climate resilience for our entire population," said the ministry official. As a result, the Ministry of Water and Environment and the relevant local government authorities have shown commitment to supporting the AIP WACDEP-G initiative, by actively engaging in the project's implementation and ongoing monitoring.

Additionally, AIP WACDEP-G will initially target Benin, Cameroon, Uganda, Tunisia, and Zambia in five transboundary basins: North-West Sahara Aquifer System, Volta Basin, Lake Chad Basin, Kagera/Lake Victoria Basin, and Zambezi River Basin. With the lessons learned from the pilot countries, AIP WACDEP-G will scale up to another 13, reaching up to 18 countries across Africa.

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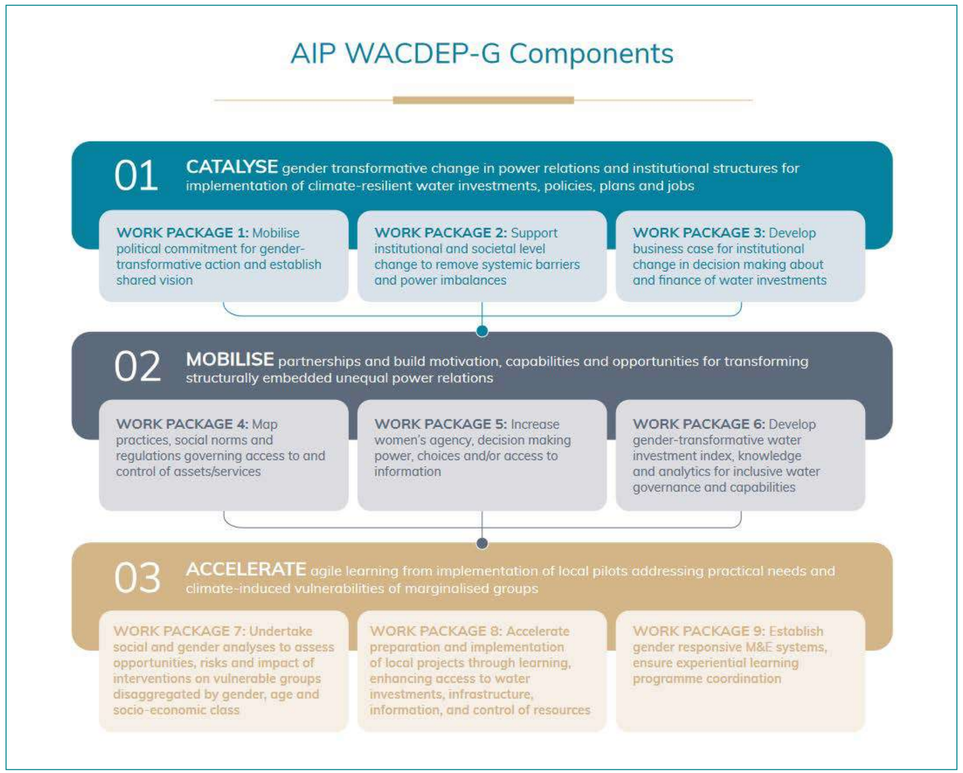

CASE STUDY

'Global Water Leadership in a Changing Climate' programme influences climate-resilient policies in Nepal

THEMES: **external support agencies, climate resilience, basin-level action, Nepal**

The Global Water Leadership in a Changing Climate programme (GWL) focuses on supporting climate-resilient policies and plans for the sustainable management of freshwater resources. In Nepal, the programme has been working closely with the country's Climate Change Management Division (CCMD) of the Ministry of Forests and Environment, considering how to strengthen coordination mechanisms for the implementation of Nepal's Nationally Determined Contribution (NDC), National Adaptation Plan (NAP), and the country's climate change policies.

Through a series of workshops held in each of the seven provinces across Nepal, the GWL programme influenced the agenda, sharing findings from the AGWA's Water Tracker diagnostic of 14 climate policies and encouraging approximately 195 organizations to think more deeply about water's role in their climate policies. As a result, calls were made for greater consideration of basin-level water actions, and water is now expected to be given higher priority during future revisions of climate policies and plans.

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Photo credit: Global Water Partnership

Photo credit: Global Water Partnership

CASE STUDY

Youth-led data collection strengthens inter-agency knowledge on climate resilience

THEMES: **civil society, climate vulnerability, intergenerational dialogue, Bolivia**

Bolivian families are already facing the impacts of climate change. Due to underinvestment in services and infrastructure, insufficient urban planning, and the exploitation of natural resources, climate change is exacerbating existing social and economic inequalities. These impacts are felt more acutely in urban areas as communities face water and food shortages and an increase in mosquito-borne diseases. This situation especially concerns children and young people, who comprise 61.8% of the country's urban population, increasing their vulnerability to these effects.

Fundación Gaia Pacha, a Bolivian civil society organization, has taken the initiative to address climate change-related issues by creating a network of young people as 'Agents for Climate Resilience'. This initiative, called Strengthening the voices of adolescents and young people in climate change was promoted by UNICEF Bolivia, with support from the Swedish Embassy in Bolivia. The project trained young people to use digital tools and participatory methods to gather data on the community's experiences of the effects of climate change in urban contexts.

Inadequate and outdated community data has been an obstacle in addressing the needs of communities facing the impacts of climate change. The network updated long-standing socio-environmental data on climate-vulnerable services. They used this updated data to propose solutions to the government for reducing climate vulnerability. The network collected community concerns regarding issues such as accessing water services and how poor urban planning exacerbates these issues in cities. The data collected helped create climate change resilience indices, which informed the appropriate actions needed to address these issues and the development of advocacy proposals for the government. Fundación Gaia Pacha continues to work with the Municipality of Tiquipaya, Cochabamba, where meetings have already led to prioritizing water recharge areas.

Young Bolivians, supported by Fundación Gaia Pacha, played a crucial role in generating climate-related data, analysis, and proposals for advocacy and solutions. The project contributed significantly to strengthening the inter-generational and inter-agency knowledge exchange and capacity building of both decision-makers and youth to address the challenges of climate change and build community resilience in the face of the further effects of a changing climate.

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CASE STUDY

Climate-resilient social entrepreneurial model for sanitation workers inspires Pakistan Government

THEMES: **civil society, climate vulnerability, community-driven water conservation, Pakistan**

Sanitation workers in Muzaffargarh District, Punjab have been facing a major challenge in accessing basic water, sanitation and hygiene services despite being the ones responsible for managing services for others. This situation reflects the serious problem of safe water access in Pakistan, a country that is highly vulnerable to the effects of climate change. However, a programme implemented by the Welthungerhilfe (WHH) and AGAHE, a national NGO, is helping to improve the situation for sanitation workers. The programme focuses on leveraging the water and sanitation system as an entry point to reducing climate exposure and vulnerability by improving the working conditions of sanitation workers, eliminating social discrimination, and providing water, sanitation and hygiene services to the community.

It is an innovative social enterprise model that provides clean drinking water to the community free of cost. Only service charges are collected to ensure proper operation and maintenance for its sustainability, with a small profit margin for generating income opportunities for the community. The facility incorporates a filtration technique and robust infrastructure that ensures continuous operation even in challenging circumstances, such as floods, and is designed above ground level to counter the effects of adverse climatic conditions, including floods. This programme embodies values that matter to the sanitation workers' communities, including providing clean drinking water to locals while promoting environmental sustainability and social empowerment.

The programme has an important objective of enabling the sanitation workers' community to become financially self-sufficient in meeting the operation and maintenance needs of their respective drinking water facilities. In addition, the programme promotes environmental knowledge by sensitizing the sanitation workers on the importance of water conservation and efficient use of water resources, both at the water filtration plant and the ground water level. Furthermore, it encourages them to keep the area clean by ensuring proper management of solid waste.

The Government of Punjab considers this programme a success to reduce climate vulnerability and is seeking to scale it up. The district of Muzaffargarh is now an emerging point of reference for other districts in the Punjab province on the importance of having key actors influence and critically evaluate successful and limiting practices and policies, given climate change and social inequality dynamics.

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CASE STUDY

'Climate Smart Utilities' initiative inspiring a sustainable future for the water sector

THEMES: **civil society, utilities, climate adaptation and mitigation, mentorship platform**

The International Water Association's Climate Smart Utilities (CSU) Initiative is championing best practices and technologies that could inspire utilities and the wider professional water community. The initiative is helping in the transition towards climate resilience, focusing on adaption, mitigation, and leadership. It is structured around four components:

- A **'community of practice'** around climate change adaptation and mitigation, to bridge science and practice, and trigger necessary cultural shifts and actions;
- A **'utility leaders exchange programme'** to drive decision-making towards climate resilience;
- A **'web platform'** - a digital library to share resources and contribute to the wider dissemination of the change agenda; and
- A **'climate smart vision'** - to increase awareness and encourage utilities to include climate change in their agendas, including a 'recognition programme', to inspire utilities on their journey to improve their climate resilience.

The initiative has gained significant momentum, being endorsed by 46 companies in 16 countries. It has inspired utilities, regulators and urban planners to become more climate-resilient and to deliver innovative tools and knowledge exchange to support the green transition.

Notable examples of CSU member best practices include The Capital Eco-pro Group in China, Manila Water in the Philippines, and Dunea in the Netherlands. The Capital Eco-pro Group demonstrated diversified water resource utilization strategies to protect water sources, while Manila Water developed the Climate Change Policy in 2007, predating the formal legislation on national climate change plans. Dunea's collaboration with multiple stakeholders helped develop water solutions that now contribute to solving greater societal challenges, such as climate change adaptation, biodiversity protection, and prevention of salinization of surface water and groundwater.

These examples provide inspiration for new utilities to embark on the climate transition journey and foster utility-utility collaboration. Beyond best practices and recognition, the CSU initiative equips utility members with vital tools through master classes, and guideline documents. These resources empower them with the knowledge and techniques needed to assess their carbon footprint, thereby enhancing their climate adaptation and mitigation efforts. Additionally, the CSU initiative has raised the profile of climate smart utilities on international platforms, such as World Water Congress Copenhagen 2022 UN Water Conference 2023, Bonn Climate Conference 23, and UN-Habitat GWOP Conference 23.

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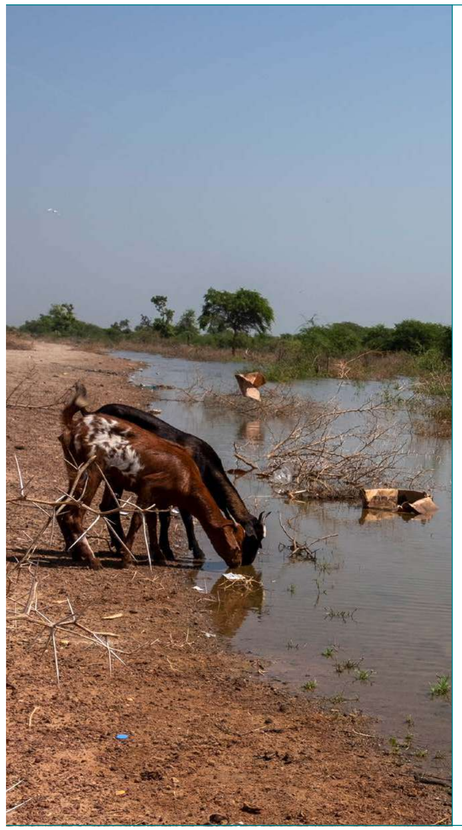

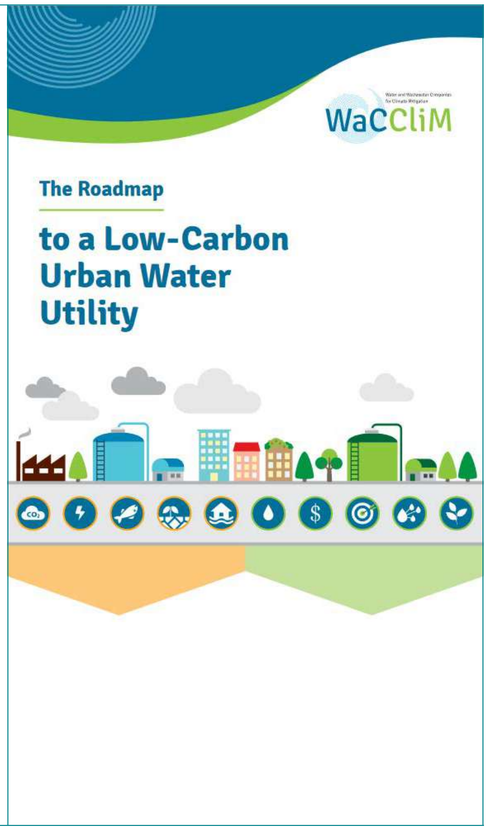

CASE STUDY

Agua y Saneamientos Argentinos implements policies to mitigate and adapt to climate change in Argentina

THEMES: **utilities and regulators, mitigation and adaptation, Argentina**

Agua y Saneamientos Argentinos (AySA), the water and sewage service provider for Buenos Aires city and metropolitan area, is developing numerous internal policies, strategies and plans to contribute to climate change mitigation and adaptation. These initiatives include early warning programmes and monitoring of water supply sources, modification of the energy supply matrix, supporting a circular economy, and other initiatives. Additionally, the initiative on process optimization has improved the efficiency of water network management, through the design and implementation of a Non-Revenue Water Control Action Plan.

Through these policies and strategies, AySA has been able to reduce water losses by 13% over 10 years, reduce energy consumption by 50% in the company's wastewater treatment plants, and generate renewable energy from sources such as photovoltaic power generation plants, wind farms, and biogas. Additionally, AySA is working on a pilot project to reuse water from wastewater treatment plants and to remove groundwater contaminants, using innovative technologies.

With these initiatives, AySA is reducing its emissions by 22.40%, contributing to water conservation, and reuse within a circular economy.

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CASE STUDIES

Coordination

CASE STUDY

GWP-UNICEF climate framework strengthens multi-stakeholder consultations in Uganda and Cambodia

THEMES: **external support agencies, climate risks, mitigation and adaptation**

The Global Water Partnership (GWP) and UNICEF's Strategic Framework for WASH Climate-Resilient Development have been instrumental in developing a step-by-step process and guidance to help address climate risks in the water, sanitation, and hygiene sector. This has resulted in impactful case studies from Uganda and Cambodia, where multi-stakeholder consultations and desk research have been conducted, with a view to identifying technical and non-technical solutions that could mitigate and adapt to the climate risks impacting water, sanitation and hygiene services.

By aligning with the recommendations set by the Green Climate Fund (GCF) to develop a climate-resilient project, both countries have been successful in embedding climate-related risks and vulnerabilities into water, sanitation and hygiene sector policymaking and programming. This approach has led to the identification of the best possible climate-resilient water and sanitation solutions, as well as influencing the formulation of updated NDCs, and supporting the formulation of climate financing proposals.

In addition, the development of dedicated national 'WASH and Climate Task Force' has been instrumental in coordinating and monitoring the implementation of response frameworks and related action plans – particularly in Uganda. These plans provide a roadmap with specifics and on how and where to implement water- and sanitation-related national climate priorities, assisting policymakers, donors, and practitioners in achieving climate-resilient services – and bridging the gap between climate policies and water, sanitation and hygiene policies. The successful experiences of these two countries highlight the importance of multi-stakeholder consultation and comprehensive climate risk and vulnerability assessments in achieving impactful, climate-resilient services.

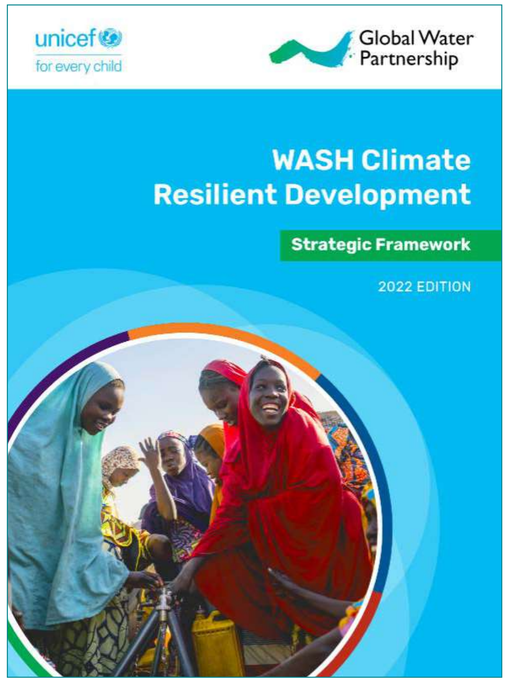

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Photo credit: Sebastian Rich

CASE STUDY

Climate vulnerability capacity analysis builds community-led climate adaptation

THEMES: **civil society, participatory research, climate-resilient communities, campaigns, Zambia**

Climate change is already affecting Zambia. It has impacted water, sanitation and hygiene services, livelihoods, and food security in particular. In the past ten years, unpredictable rainfall patterns, drought, and flash floods have led to waterborne diseases and other climate-related impacts. Those who live in rural areas, facing poverty and marginalization, are the most affected by climate change. The absence of adequate sanitation facilities and the fact that agriculture (rural communities' main source of income) is heavily impacted by erratic rainfall, exacerbates the situation.

To help communities adjust to the impacts of climate change, it is essential to increase their understanding of climate-related risks to their lives and livelihoods. CARE Zambia uses a tool called the 'Climate Vulnerability Capacity Analysis' (CVCA), which can be the first step for identifying options to build climate resilience at the community level. CVCA uses participatory research, as well as secondary research, to gain a local understanding of vulnerability to climate change and existing resilience capacities. It brings together not just communities, but multiple sector actors (such as local governments and development partners) to assess, analyze, and understand climate vulnerabilities, risks, and capacities. CVCA findings can then be used as a basis for developing campaigns for systemic change and influence national and subnational climate adaptation planning processes.

The CVCA has been implemented in Zambia and has been successful in influencing the country's policies. It has also influenced government and sector policy in other countries. In Cameroon, village-level adaptation plans were aligned with the council-level planning process to identify community infrastructure projects that facilitate adaptation to climate change and improved resilience. In Niger, the CVCA supports communities to understand the implications of climate change by combining local knowledge with scientific data to build understanding of climate risks and adaptation strategies. This has resulted in farmers setting up innovation platforms gathering farmers, researchers, and local government stakeholders to address climate change together.

Actions identified through the CVCA are often integrated into local development and adaptation plans, representing an initial step in the cycle of planning, implementing, and monitoring community efforts toward adaptation and resilience building. By using the CVCA, rural communities can become more aware of climate-related risks, advocate and coordinate better to take steps to increase their resilience to climate change.

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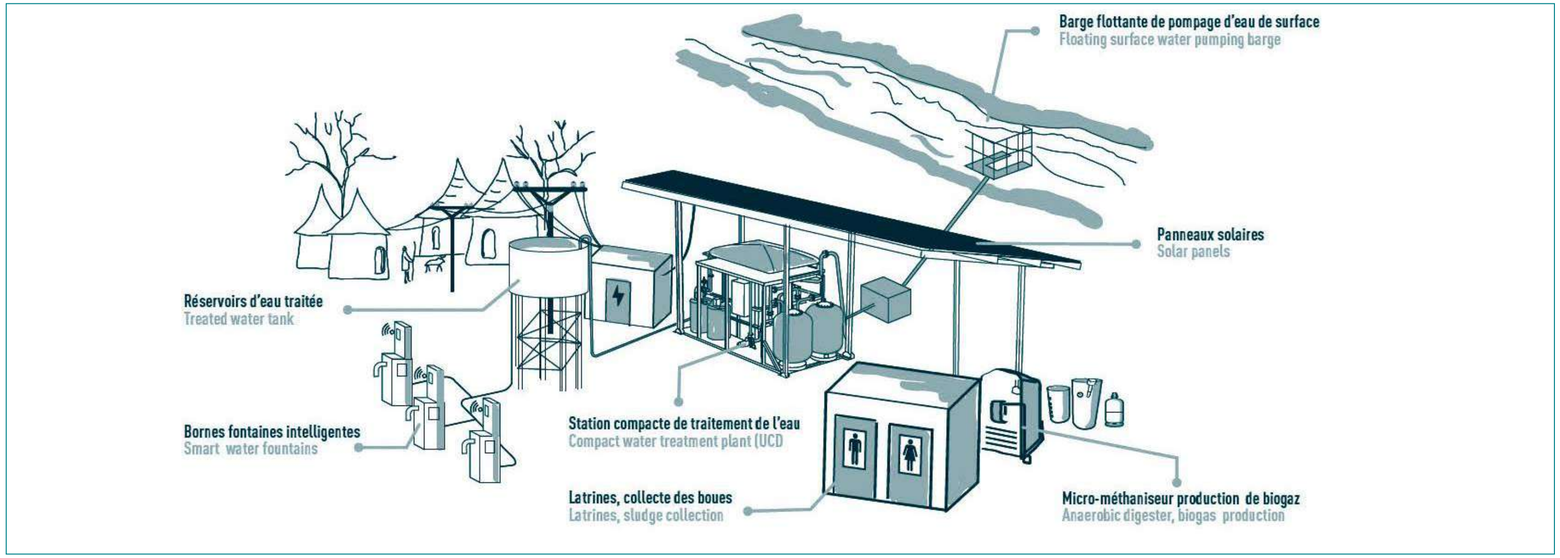
CASE STUDY

Eco-friendly 'Smart Villages' improving the lives of rural communities in Côte d'Ivoire

THEMES: **public-private partnership, climate-resilient technology, reducing emissions, Côte d'Ivoire**



The Côte d'Ivoire government has partnered with SWA Private Sector partner Aquafed and SUEZ to implement 40 Decentralized Compact Units (UCDs) across the country. UCDs are prefabricated and standardized metal water treatment plants that ensure surface water treatment and enable large-scale drinking water production capacities of up to 100 cubic metres per hour.

In Côte d'Ivoire, the UCDs have ensured a drinking water supply in 32 towns that previously had a water deficit, representing a daily capacity of 92,000 cubic metres. The UCDs are climate-resilient solutions, creating economic activity and providing essential services to rural communities.

The UCDs are implemented through SUEZ's 'Smart Village' solutions, which integrate the necessary services to promote the socio-economic development of rural communities and peri-urban areas. The 'Smart Village' model includes an energy-autonomous drinking water supply chain, off-grid energy distribution, sanitation service, and upgrading latrine sludge and agricultural organic waste to produce cooking gas.

UCDs and Smart Villages have shown that it is possible to deliver water, sanitation, and energy sustainably and reliably, where it was previously lacking. These solutions also support women in rural areas to gain security, freedom, and autonomy by eliminating chores for water and wood.

UCDs and Smart Villages are environmentally friendly, scalable solutions that have been shown to reduce greenhouse gas emissions by 23%. The villages use surface water flowing to the sea, which is constantly renewed, and as an alternative to borehole water, it can prevent water scarcity and the disappearance of water bodies.

Implementing such coordinated efforts by different stakeholders can support governments to reach rural communities with adequate, renewable water sources while attaining national climate targets by reducing greenhouse gas emissions associated with water supply.

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CASE STUDY

Project 'CACMUS' brings access to resilient services for climate migrants in Bangladesh's informal urban settlement

THEMES: **civil society, climate vulnerability, migration, anti-poverty savings scheme, Bangladesh**

A recent study by WaterAid revealed that 86% of forcibly displaced inhabitants in Bangladesh's informal urban settlements had moved there due to climatic vulnerabilities. Once in the urban slums, they are deprived sanitation and hygiene, with climate change increasingly affecting the country and compounding this lack of access to services. In the northern region of Bangladesh, specifically in the Rajshahi division, people are forced to leave their homes due to river erosion, which is caused by climate change. Communities are broken up and people are forced to migrate to city slum areas, to escape the adverse effects of climate change.of basic services and skills training. However, the civil society organization Village Education Resource Center has initiated a project supported by WaterAid and in coordination with city authorities, to address the limited access to water, sanitation and hygiene services that is faced by internally displaced people living in urban slums.

The Composite Actions for Climate Migrants in Urban Slums (CACMUS) project has been successful in improving the livelihoods of climate-vulnerable communities in the Rajshahi city area. Over the past few years, more than 40,000 low-income and slum households have been provided with improved sanitation facilities, along with safe drinking water from 2,350 tubewells installed in marginalized areas. Other settlement improvement facilities include development of footpaths, drains, dustbins and community latrine centres.

Community development communities' have supervised and monitored these infrastructural and settlement improvement activities. The communities have also come together in an anti-poverty savings scheme to raise more than Taka 12.5 crore (around US$ 1.5million). Additionally, different initiatives were promoted, such as urban food production technology demonstrations, apprenticeships, and vocational training, to improve job opportunities for youth.

The project's affiliation with the city authority's plan for low-income settlements has ensured necessary budgetary action to extend services, and to maintain them with operation and management provision. Increased coordination with senior city officials and the city's mayor in mobilizing necessary support has been a critical success factor for the project.

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Furthermore, the project's alignment with Bangladesh's priority area of water security and national water, sanitation and hygiene-related policies and frameworks has ensured its sustainability and potential for replication in other climate-vulnerable areas. As such, CACMUS provides a promising model for collaboration with government and communities to address the impacts of climate change and strengthen self-sufficiency for sustainable access to services.

CASE STUDY

'Suvidha' centres: providing climate-resilient sanitation services to Mumbai's informal urban settlements

THEMES: **private sector, climate resilience, sustainable services, informal urban settlements**

Five million people in Mumbai's urban informal settlements do not have access to toilets at home, and therefore depend on community facilities. In partnership with HSBC India, the Brihanmumbai Municipal Corporation, local NGOs and technical partners, Hindustan Unilever (HUL) has built 12 Suvidha centres in Mumbai since 2016.

Suvidha centres are climate-resilient, purpose-built, sustainable community hygiene centres that provide access to clean toilets, handwashing facilities, drinking water, and laundry facilities for people living in informal urban settlements, at an affordable cost. They provide access to safe sanitation services to over 300,000 people annually. An impact assessment report in 2021 suggested that 70% of Suvidha centre users felt the centres had improved their self-esteem.

The centres are powered by solar panels, harvest rainwater, and treat and reuse greywater from handwashing and laundry facilities on-site for flushing toilets – saving over 50 million litres of water per year.

The centres are designed to keep the safety and accessibility needs of women, children, the elderly, and persons with disabilities in mind. For instance, gender-segregated and well-lit facilities improve women's safety. The centres provide employment opportunities to the community, particularly for women, with over 300 individuals working on the programme (65% of full-time employees being women). To maximize impact, Unilever also undertakes extensive water, sanitation and hygiene behaviour-change activities in the communities surrounding the centres.

Such centres exemplify how collaborative efforts between municipal bodies, the private sector, NGOs, and financing institutions can address water, sanitation, and hygiene issues – in environmentally sustainable ways. These efforts can be replicated with similar models to address informal settlement access to basic services, while contributing to the attainment of national climate and environmental targets.

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Photo credit: Hindustan Unilever

CASE STUDY

Innovative approach to supply safe drinking water and tackle effects of climate change

THEMES: **social enterprise, civil society, rural water supply, climate-resilient designs, Madagascar**

A small but impactful initiative by 1001 Fontaine's has led to significant outcomes to ensure safe drinking water supply, without contributing to plastic pollution.

Climate change is affecting water availability and quality in Madagascar. This is because most of the population relies on self-supply water sources, which are often contaminated due to the use of inappropriate containers for water collection. Extreme weather events further damage the already limited water supply infrastructure, increasing water quality risks in piped systems. To address this issue, 1001fontaines and a local NGO, Ranontsika, in coordination with local authorities, have established infrastructure and capabilities to produce safe drinking water from locally available water sources. The water is treated and conditioned in 20-litre jerricans and made available to those without access to safe drinking water at home. What is unique about this initiative is that locally available jerricans, formerly used for cooking oil, are reconditioned and used to store the water, ensuring their safety without the need for plastic imports to the island. This maintains an affordable price for the population as well as contributing to reducing plastic pollution.

In Cambodia, 1001fontaines and Teuk Saat 1001 have established water kiosks in over 300 communes across 18 provinces. The kiosks operate with climate-resilient designs and feature adaptive treatment systems to address local raw water source contamination. The water kiosks also offer home delivery services for last-mile accessibility and use reusable 20-litre bottles to reduce plastic pollution. The initiative has been UNFCCC-certified for carbon credit emission reduction, with over 17,000 tons of emissions avoided annually because of people switching from boiling water to consuming safe drinking water.

These initiatives have a positive impact on public health and the environment. They ensure safe drinking water supply without contributing to plastic pollution and are cost-effective, making it accessible to everyone.

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CASE STUDY

Strengthening community management for climate resilience in Ecuador's water protection areas

THEMES: **civil society, community management, education, water source protection, Ecuador**

The Ministry of Environment, Water and Ecological Transition (MAATE) in Ecuador has established 22 Water Protection Areas (WPAs) as part of policies to protect water sources affected by climate change and pollution. However, these areas require community management, with planning and implementation tools adapted to each context. To strengthen sub-national government policies, the Resilient Andes project developed a guide on how to build 'technical management plans', which integrates climate change and gender considerations into community management practice for the WPAs.

The Resilient Andes project is implemented by Fundación AVINA, in collaboration with MAATE. As part of the project, a 'water school' was held in the San Simón parish of the Bolívar province. The school consisted of a series of face-to-face sessions with leaders and young people from San Simón, every two weeks for six months. The sessions strengthened capacities in community-led adaptation, ancestral knowledge and wisdom, water resource management, maintenance of water systems, environmental sanitation, and more. Thanks to this project, the San Simón Water Protection Area was declared the first Water Protection Area in the Bolívar province. A 'Technical Water Board' of the parish of San Simón was also established as a community governance mechanism, based on the generation of social relations between diverse groups to manage the implementation of the management and strengthen the WPA. Educational materials were also generated and delivered to local schools to replicate these trainings with their students, improving community ownership of the management of the area.

The experience of the Resilient Andes project highlights the importance of adaptive capacity, community involvement and education in the management of natural resources. By implementing management plans with climate change and gender criteria integrated, Ecuador is taking important steps towards sustainable and resilient development.

Photo credit: Santiago Arcos

The sessions strengthened capacities in community-led adaptation, ancestral knowledge and wisdom, water resource management, maintenance of water systems, environmental sanitation, and more. Thanks to this project, the San Simón Water Protection Area was declared the first Water Protection Area in the Bolívar province.

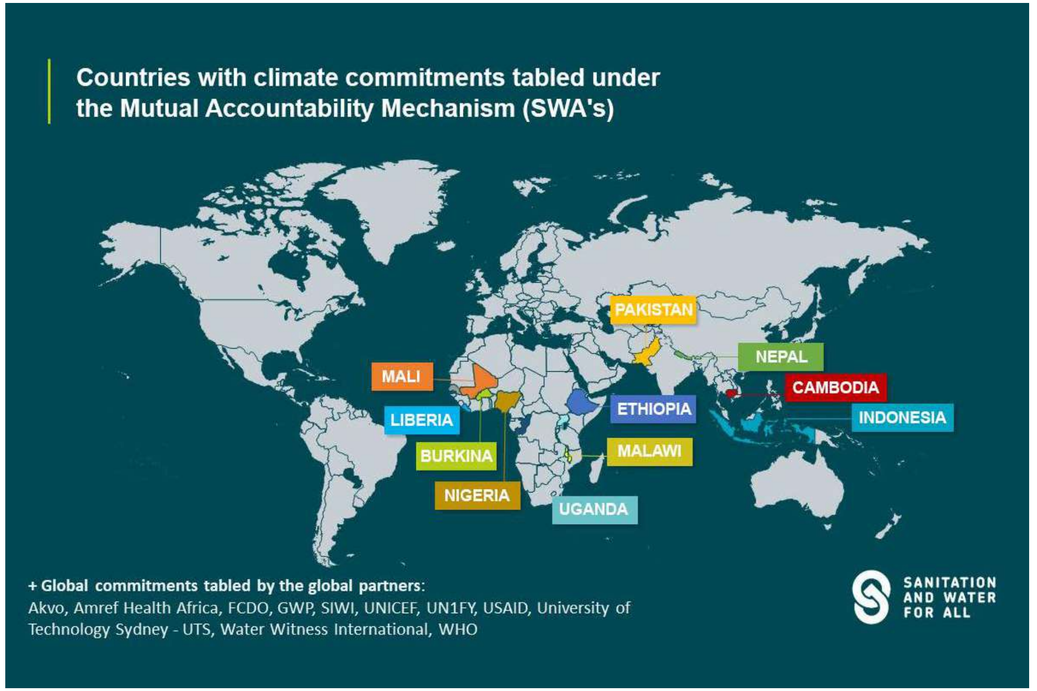
CASE STUDIES
Accountability

CASE STUDY

SWA's Mutual Accountability Mechanism as a climate accountability tool

THEMES: **climate commitments, nationally determined contributions, national adaptation plans**

SWA's Mutual Accountability Mechanism (MAM) is the only global accountability process in the sector that is dedicated to all stakeholders working together towards achieving the Sustainable Development Goals' water and sanitation targets. Since the MAM was launched in 2018, over 400 global and national commitments have been tabled, with half of them coming from 60 national governments. Commitments are periodically monitored by partners. The first MAM Global Report was published in 2021 and a new one will be published in 2024.



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In the context of the fulfilling their commitment to the Paris Agreement, countries such as Burundi, Chad, Congo, Eswatini, Fiji, Honduras, Nigeria, Togo and Zimbabwe made significant progress towards the inclusion of drinking water, sanitation and hygiene in the revised versions of their Nationally Determined Contributions (NDCs). In addition, National Adaptation Plans are being increasingly considered for inclusion as MAM commitments by a number of SWA partner countries, facilitating inter-sectoral, multi-stakeholder collaboration and monitoring.

By 2023, partners operating at both national and global levels had tabled 40 commitments under the Mutual Accountability Mechanism. The steep increase in the number of climate commitments (until 2021 there were only five) directly reflects SWA's ongoing political and capacity-building efforts, along with partners' increasing efforts in this critical area.

At the national level, submissions are currently driven by governments – aligned with SWA's objective to champion government-led, multi-stakeholder approaches. Nineteen climate-related commitments have been tabled by the ministries responsible for water and sanitation in Burkina Faso, Cambodia, Ethiopia, Indonesia, Liberia, Malawi, Mali, Nepal, Pakistan, Sierra Leone and Uganda, some of them in partnership with other government bodies and actors like civil society and UNICEF.

Among other goals, global partners and national partners are committed to build capacity to better integrate climate action and the delivery of water, sanitation and hygiene services (Amref, FCDO, SIWI, University of Technology Sydney, the governments of Cambodia, Liberia, Uganda and The Able Plus Research Center from Pakistan) and to develop climate finance strategies and make the sector ready to access climate funds (governments of Cambodia, Ethiopia, Indonesia, Malawi, Mali, Nepal, Pakistan, and Uganda).

Although commitments were tabled recently, three countries have already reported progress: Burkina Faso (to strengthen inter-ministerial collaboration - *on track*); Mali (to conduct research on availability of water resources in relation to climate change and social demand – *almost fully achieved*); and Malawi to develop a climate-resilient WASH sector financing strategy – *fully achieved*, and to increase alignment to sector strategies – *on track*).

CASE STUDY

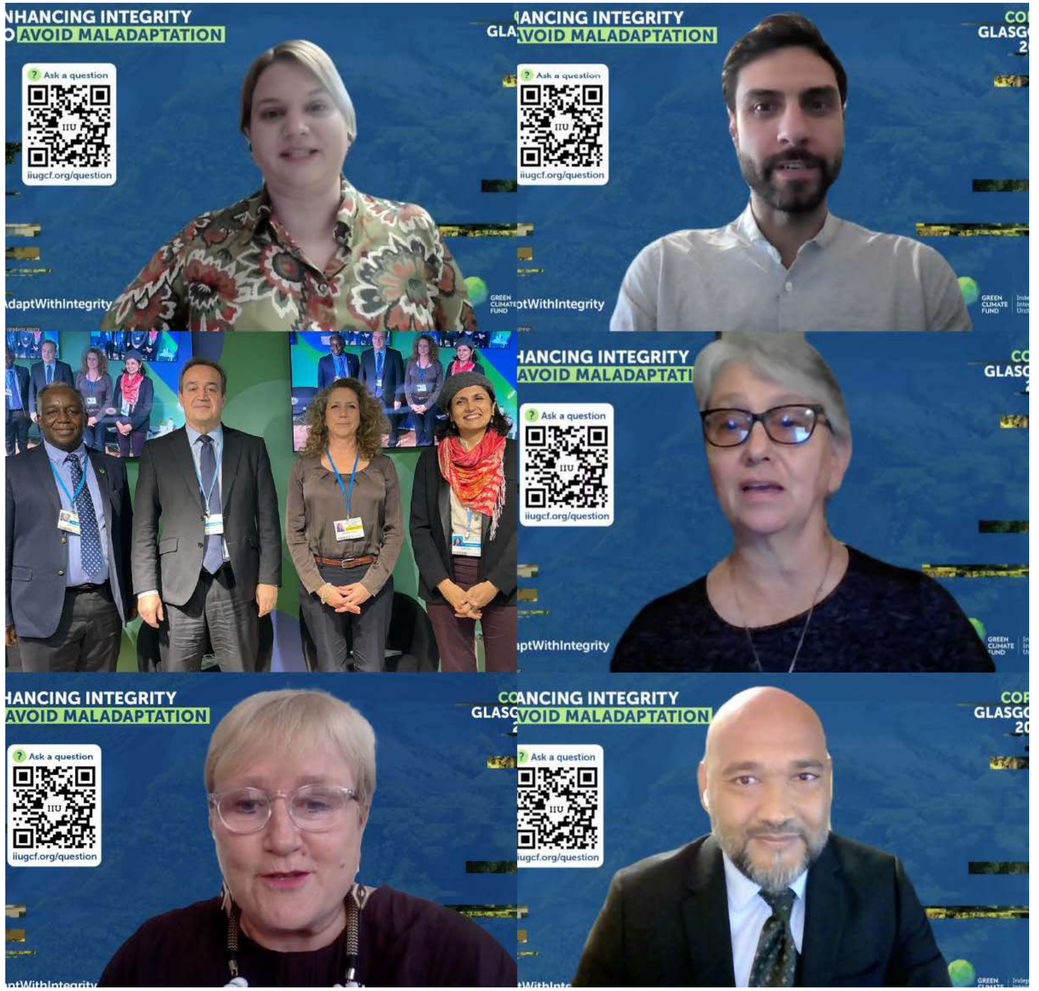
Putting integrity at the heart of climate adaptation and finance

THEMES: **climate commitments, nationally determined contributions, national adaptation plans, strengthening governance**

Water infrastructure development for climate adaptation can be prone to corruption, bribery, and nepotism, especially at the procurement stage. In the absence of strong governance to uphold high standards of integrity, climate finance can be diverted from vital prevention and adaptation activities - for example into vanity projects or even private bank accounts, often leading to catastrophic effects for vulnerable countries.

To take these critical messages forward, the Water Integrity Network, in collaboration with the Green Climate Fund (GCF) and other key partners, has launched a thematic brief to examine the linkages between maladaptation and failures in corruption and integrity. This nexus stems from power imbalances that exist in both development and climate adaptation, which can exclude the most vulnerable groups from decision-making processes. Powerful lobbies, corruption and political agendas can lead to maladaptation by influencing key players and keeping potential benefits away from those who need it most.

To address these issues, the study presented six key recommendations, including advocating for more research across key adaptation sectors, encouraging collective action at the global, national, and local level, developing integrity tools, knowledge products, and anti-corruption strategies to increase transparency, and implementing a 'zero-tolerance' culture among executing agencies. Given the inherently top-down nature of climate finance, the study also emphasized the importance of raising awareness and building capacity and integrity at each step of the local, national, and global levels.



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CASE STUDY

Bangladesh's 'Mother's Parliament' initiative empowering communities to solve water issues

THEMES: **civil society, community participation, accountability initiative, Bangladesh**

The Development Organisation of the Rural Poor (DORP) is a civil society organization in the south-western coastal region of Bangladesh. It has developed an innovative accountability initiative called 'The Mother's Parliament'. It is a body consisting of nine members representing local 'health village groups'. Each group elects their representatives. The Mother's Parliament works to solve community-level issues raised by water users by bringing those issues to the local government level.

One of the most significant features of this initiative is that it is entirely community-led and easily replicable. The elected leaders work closely with the community group to identify community needs and concerns, which are then brought to the Mother's Parliament agenda for advocacy with the respective local government to solve water issues.

The Mother's Parliament has been immensely successful in ensuring affordable technology is available to combat increased salinity and flooding due to climate change. The advocacy has encouraged Local Government Institutes to install 24 solar-powered pond sand filters and achieved an increased budget allocation of 125% for water, sanitation, and hygiene at the community level. As a result, approximately 12,500 people gained access to potable water.

This approach has empowered the most marginalized and promoted joint advocacy to solve local needs as identified by communities to address access and climate issues.

Photo credit: Md. Sawkat Chowdhury, DORP

The Mother's Parliament has been immensely successful in ensuring affordable technology is available to combat increased salinity and flooding due to climate change.

CASE STUDY

Civil society networks build evidence to influence inclusion of water, sanitation and hygiene in climate policies

THEMES: **evidence-based advocacy, multi-stakeholder consultations, policy recommendations, civil society**

In Togo, Uganda, and Nigeria, civil society networks have been working to build evidence and awareness of the links between climate action and the water, sanitation and hygiene sector. Through analysis of national climate policies and documents (including Nationally Determined Contributions and National Adaptation Plans), the importance of integrating sector considerations into national and regional climate accountability efforts has been highlighted.

In Togo, SWA civil society partner Jeunes Volontaires pour l'Environnement (JVE) led a region-first study analyzing climate policy documents and NDCs across 15 countries in the Economic Community of West African States (ECOWAS) region. The report proposed improvements to better integrate water, sanitation and hygiene within existing NDCs, for example by prioritizing the replenishment of water resources and providing clearer costing for water and sanitation in climate finance strategies.

In Uganda, the Government has implemented numerous climate action policies and plans under the Paris Agreement, with dedicated climate financing to improve water resources. However, sanitation coverage required urgent investment, as highlighted by SWA partner Uganda Water and Sanitation NGO Network's (UWASNET) national assessment of climate risks and resilient water and sanitation solutions. According to the study, change was slow due to disjointed water and sanitation policies, with many climate policies not incorporating sanitation or hygiene concerns. UWASNET proposed a comprehensive new water, sanitation and hygiene policy for Uganda as a solution to build resilience to the adverse impacts of climate change.

Similarly, in Nigeria, the civil society network Society for Water and Sanitation (NEWSAN) reviewed national policy documents on climate change to ascertain how well climate change policy and action had been embedded within the water, sanitation, and hygiene sector. Additionally, NEWSAN reviewed its own commitments under SWA's Mutual Accountability Mechanism, to ascertain whether its advocacy and activities accurately reflected the challenges facing the sector from climate change. A multi-stakeholder consultation ensured comprehensive review that considered a broad range of perspectives, bringing together government stakeholders from health, finance, education, water, environment, and climate change sectors, as well as parliamentarians from both Houses of the country's parliament with an interest in water, sanitation and hygiene. This has helped to construct a holistic review for stronger policies, including the development of national targets that reiterate the importance of climate change action in water, sanitation and hygiene policies and frameworks in Nigeria.

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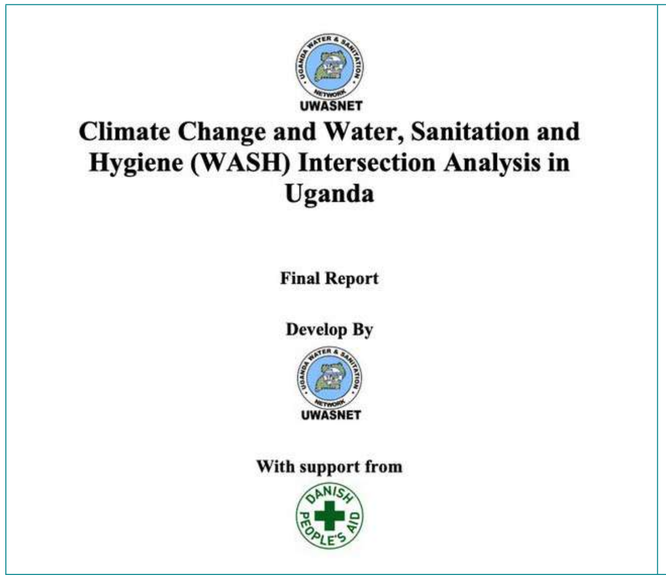
UWASNET

Climate Change and Water, Sanitation and Hygiene (WASH) Intersection Analysis in Uganda

Final Report

Develop By

UWASNET

With support from

DANISH PEOPLE'S AID

CASE STUDY

'Claim Your Water Rights' campaign strengthens climate justice narrative in the water and sanitation sector

THEMES: **civil society, climate justice, evidence-based advocacy, accountability, human rights**

End Water Poverty's 'Claim Your Water Rights' campaign has supported civil society organizations in Ghana, Madagascar, Pakistan, and Zambia to play a pivotal role in propelling accountability and government action towards realizing water and sanitation rights. The organizations have used a multi-pronged approach, incorporating evidence-based advocacy, community mobilization, and media outreach to address the challenges of climate change in relation to these rights.

In Zambia, the civil society network, 'Zambia NGO WASH Forum' strengthened civil society's understanding of climate justice, by bringing together actors from the water, sanitation and climate sectors. A training session was conducted, followed by a public discussion to influence policy and practice on the protection and management of groundwater. Representatives from the Government, service regulators, and traditional leaders discussed how wastewater discharge and upstream dams created by large-scale commercial farms had impacted the ecosystem of the Chalimbana river, affecting drinking water and crop irrigation. The Ministry of Green Economy and Environment acknowledged water and sanitation as critical elements of climate adaptation following the Forum's multiple engagements.

In Ghana, the Coalition of NGOs in Water and Sanitation (CONIWAS) and Water Citizens Network used Claim Your Water Rights to advocate for water and climate justice. They documented the effects of anthropogenic climate change at a local level, particularly on water sources in Wassa East, where communities rely on the Pra river or live in impoverished settlements with inadequate water and sanitation facilities. CONIWAS published a policy brief recommending the introduction of community water quality testing to meet human rights standards. This evidence, combined with policy recommendations, community mobilization, and engagements with Ghana's Commission on Human Rights and Administrative Justice (CHRAJ), led to the Government supporting commitments to improving future interventions.

In the south of Madagascar, desertification causes severe drought and famine, leading to frequent water shortages. Civil society organization AVARA trained young people to produce multimedia programmes and organized sessions to highlight the region's water crisis and promote the human rights to water and sanitation. The work has helped raise community and government awareness, bringing the human rights to water and sanitation in the context of climate change within the sphere of Madagascar's public and political discourse.

In Pakistan, the civil society organization Integrated Regional Support Programme (IRSP) amplified community voices by engaging with 'Mohana' families, who rely on one of Asia's largest freshwater lakes, the Manchar. The lake is becoming increasingly depleted and polluted, compounded by drought and salination, which are the effects of the climate crisis. In addition, there is a lack of sanitation infrastructure, forcing families to defecate in the open or into floating toilets. Through media interviews, the IRSP shared community experiences and civil society recommendations for conserving the lake with the provincial and federal government. The organization thus increased the public and political profile of water and climate issues in Pakistan.

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End Water Poverty's Claim Your Water Rights campaign demonstrates that upholding human rights is essential to ensuring a just response to the climate crisis. The campaign has helped civil society voices articulate a clearer stance in their advocacy efforts and has achieved real impacts and concessions from decision-makers.

Photo credit: IRSP Pakistan

CASE STUDY

'WE-WE' approach empowers women with water entrepreneurship model in climate-vulnerable communities

THEMES: **research and learning, climate vulnerability, women leadership, Bangladesh**

In Bangladesh, a country frequently experiencing flood incidences, WaterAid supported climate-vulnerable communities in the Shyamnagar region, in the far southwest of the country, who face rapidly rising sea levels and increasingly frequent cyclones. The main aim was to ensure that communities have access to a more reliable water supply, in spite of climate impacts.

Through this project, WaterAid Bangladesh created a replicable livelihood model around water entrepreneurship for women in marginalized and climate-vulnerable communities. The model was called the 'WE-WE' approach. The Water Entrepreneurship for Women Empowerment model is rooted in the principle that climate resilience is increased when women's voices are both heard and acted upon, when considering plans for improving water supply and distribution.

In areas without alternative freshwater availability, the 'WE-WE' approach:

1. **Identifies** existing women groups or forms groups consisting of women with strong business sense and initiative;
2. **Co-invests** most of the capital costs towards constructing a water treatment facility (for example, a reverse osmosis plant), while providing technical support to the women's group, developing their leadership, business development, accounting, and reporting skills; and
3. **Ensures** that women can run a water business, generate profits, and recover the initial capital investment cost, including through a preliminary start-up fund to cover short-term operations and maintenance.

It is not only the role of women to invest time and energy into fetching water for the family. Adolescents and young girls are also pulled out of school for this purpose and have fewer chances at socioeconomic development in life. The 'WE-WE' approach helps to reduce this burden by significantly reducing the time and human effort required to fetch water. This approach also builds bottom-up accountability by strengthening capacities of communities, especially women.

Additionally, the 'WE-WE' approach is reducing the health impacts of climate change. Highly saline water sources have been a precursor to hypertension, liver damage, pre-eclampsia, and reproductive health deterioration in the region. Reverse osmosis units can clean 500 litres of water per hour that would otherwise have been ingested by community members: the health impact of 12 such plants, currently being operated under the 'WE-WE' approach, is significant and can be easily replicated in other contexts.

The Water Entrepreneurship for Women Empowerment model is rooted in the principle that climate resilience is increased when women's voices are both heard and acted upon, when considering plans for improving water supply and distribution.

Photo credit: WaterAid-Farzana Hossen

Photo credit: WaterAid-Farzana Hossen

CASE STUDIES
Financing

Photo credit: Lalaina Raoelison

CASE STUDY

Malawi adopts climate-resilient finance strategy for the water, sanitation and hygiene sector

THEMES: **civil society, climate finance, socio-economic benefits, Malawi**

The Malawi Water Sector Investment Plan (WSIP) of 2012 highlighted the need to invest in the water, sanitation, and hygiene sector for substantial socio-economic gains. However, weak finance was identified as a major barrier for its implementation in a 2020 sector systems assessment, conducted by Water for People, working with UNICEF and other sector actors. The assessment identified root causes of weak sector financing and included the effects of climate change – such as an increased incidence and intensity of floods leading to the destruction of sector infrastructure.

To address this issue, a 'Climate-Resilient WASH Finance Strategy' was developed through a multi-stakeholder process, including representatives from climate change, natural resources, health, finance, planning, agriculture, and water sectors. The strategy promotes green technology, among other strategies, and was launched by the Minister of Water and Sanitation in August 2022.

Since then, Malawi has accessed financing from the World Bank worth US$145 million, through one of the country's water utility companies. There has also been an increase in the installation of solar-powered water facilities in the country, demonstrating climate-resilient sector technologies in action.

The sector financing strategy was developed to ensure the achievement of water, sanitation and hygiene sector targets envisioned in the first of a 10 Year Implementation Plan, as well as influencing longer-term strategic planning. The strategy guides sector finance action and policy over the next nine years, as well as helping to deliver Malawi's Nationally Determined Contributions (NDCs), which feature adaptation measures specific to the water, sanitation and hygiene sector.

The finance strategy set out 18 options covering all water, sanitation and hygiene sub-sectors to reduce expenditure and increase financing to reach Malawi's sector targets, focusing on practical actions that can be taken by different stakeholders. The multi-stakeholder process to develop the strategy and resulting actions demonstrates a replicable model that brings actors together around development goals and existing climate policies and initiatives, with the objective of exploring joint solutions and mobilizing funding to achieve development targets. The strategy will be rolled out at district level first and will seek inputs to inform a concept note submitted to access the Global Climate Fund, which offers another potential stream of income to boost the sector and attainment of national targets.

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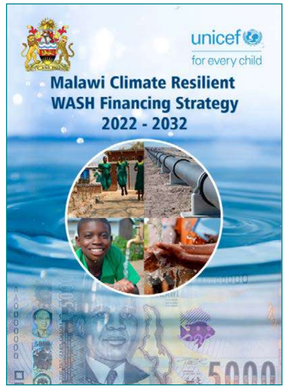

CASE STUDY

Innovative blended finance addressing water scarcity and climate change in Jordan

THEMES: **public-private partnerships, innovative finance, climate mitigation, Jordan**

Water scarcity in Jordan is the most critical constraint to growth and development in the country. The As-Samra wastewater treatment plant (WWTP), a public-private partnership, was built to increase quantity and improve the water quality in Jordan. The plant treats wastewater released from the Zarqa river basin, which serves the two populated cities of Greater Amman and Zarqa.

The project specifically addresses climate change through a variety of measures. It creates an energy self-sufficient plant, receiving 90% of its electricity needs from hydraulic and gas turbines powered by biogas. It also reduces greenhouse gas emissions by up to 90%, estimated at 40,000 tons annually. The project has grown the proportion of blended wastewater (a mix of regular wastewater and water from extreme weather events) used for irrigation from 61% to 83% over four years, irrigating approximately 4,000 farms and 10,000 hectares with high-quality Samra water. This has resulted in freeing up additional freshwater resources for potable water supply for approximately 2 million people. Additionally, WWTP has increased the water line capacity by 37%, bringing the total capacity to 365,000 cubic metres per day.

The WWTP at As-Samra is one of the first projects in the region to be delivered under a build, operate, and transfer (BOT) basis, a form of public-private partnership, which is a pioneering innovative financing solution for the sector. The project is funded through a blended financial package of 50% grants from international financial institutions (USAID/Millennium Challenge Corporation), 40% loans from a commercial banks consortium (led by Arab Bank), and 10% from the private sector.

The project has benefited from robust institutional and regulatory support mechanisms, and it exemplifies the effectiveness of the involvement of an array of strong stakeholders and cross-sectoral integration for the planning and implementation of infrastructure projects. In addition, the project has facilitated the training of around 200 local young people who aspire to work on such WWTP facilities, creating interest and a fresh workforce within sustainable resource treatment and management.

Other governments can benefit from implementing similar initiatives in collaboration with the private sector to address energy and emissions national targets within water supply with innovative financing and treatment initiatives.

Photo credit: SUEZ

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CASE STUDY

Water justice fund empowers women to tackle climate change's impact on water and sanitation

THEMES: **civil society, community-level climate resilience, capacity building, women leadership**

Photo credit: Sacha de Boer

The Water Justice Fund aims to strengthen household and community-level climate resilience and promote human rights to water and sanitation. It also catalyzes and advances localized gender-focused climate financing, increases the flow of resources at the local level, strengthens the durability of women's organizations and networks, and promotes gender equality and transformation.

The impact of climate change is felt most acutely through water. Sustainable water management and the right to water and sanitation are becoming increasingly difficult to achieve, as the effects of climate change increasingly impact service delivery. Women and girls are disproportionately affected, as they are often responsible for collecting water, own fewer resources and have less decision-making power than men.
To address this issue, SIMAVI launched the Water Justice Fund, with a specific remit, to provide financing and support for women affected by climate change.

Despite billions of dollars pledged to address climate change, less than 1% is allocated to support water services for poor communities. Gender considerations are only factored into one-third of climate projects, which reinforces the exclusion of women and other vulnerable groups from local decision-making. The Water Justice Fund provides resources directly to women and adolescent girl groups at the community level, through national civil society organizations in Kenya, Uganda, and Nepal.

The fund empowers women affected by climate change and the water crisis to make decisions on how to improve their access to water, sanitation and hygiene services. This is achieved through locally led climate adaptation measures, such as rainwater harvesting, reforestation for flood prevention, and watershed conservation approaches. Women are also able to build movements and advance their learning, building women's capacity for sector leadership through the fund.

The Water Justice Fund aims to strengthen household and community-level climate resilience and promote human rights to water and sanitation. It also catalyzes and advances localized gender-focused climate financing, increases the flow of resources at the local level, strengthens the durability of women's organizations and networks, and promotes gender equality and transformation. The fund enables women and girls' groups to establish durable solutions to water-related challenges they encounter due to climate change.

The Water Justice Fund impacts both the capacity and position of women-led groups, ensuring that they are seen as active agents and decision-makers in delivering the human rights to water and sanitation in a water-secure and climate-resilient future. Involving women in this way will be instrumental in ensuring the fulfillment of SDG commitments on climate, gender, and water and sanitation.

CASE STUDY

'Accelerator' programme supports small and medium enterprises to become climate-resilient

THEMES: **private sector, mentorship, innovation, sanitation technologies**

The Toilet Board Coalition is a global private sector actor for the water, sanitation and hygiene sector. It has sought to accelerate business solutions to delivering sanitation services through its 'Accelerator' programme. The programme matches entrepreneurs with global business leaders and investors to drive progress on SDG6.2 – sanitation for all by 2030. The Accelerator programme has been running for eight years and has supported various innovations, from new toilet designs, to decentralized treatment, nutrient recovery, and upcycling, to supporting sanitation technologies, including new technologies that can provide real-time data and enable more strategic decision-making.

In the face of the global goals on climate change, the Toilet Board Coalition has seen an opportunity to engage and support small and medium enterprises. By aligning their businesses, technologies, and messaging to be climate-resilient and supportive of climate change mitigation and adaptation efforts, the Toilet Board Coalition is helping the sector to meet and support global goals on climate change.

To upskill sanitation businesses in climate mitigation, adaption and resilience efforts, the Toilet Board Coalition has been facilitating learning across multiple stakeholder groups to leverage insights and opportunities for 200+ locally based small and medium-sized enterprises. These capacity strengthening sessions are some of the most attended sessions of each year, indicating the interest of locally based small and medium-sized sanitation businesses in contributing to climate mitigation and adaptation efforts.

9%
Cohorts

58
SMEs

+20
Countries

97%
Countries

2.4M
Lives impacted daily

30K
Tonnes of waste circled back to the economy in 2022

16K
CO_2 tonnes reduced or avoided in 2022

$22M
Direct investment facilitated

"Toilet Board Coalition's Accelerator programme is like a business toolbox for us, and we look forward to using those tools for executing our plans in the coming years. We now have a better understanding of our role, our strengths, and the opportunities in the sanitation business. A big thanks to our mentors and Toilet Board Coalition for enabling this journey for us. Happy to be part of the Toilet Board Coalition family!"

MINNA PALO,
CEO, Pikkuvihrea

By aligning their businesses, technologies, and messaging to be climate-resilient and supportive of climate change mitigation and adaptation efforts, the Toilet Board Coalition is helping the sector to meet and support global goals on climate change.

CASE STUDY

Aqua for All supports financial institutions in climate risk management for water and sanitation investments

THEMES: **private sector, climate risks, mitigation and adaptation**

Aqua for All works to bridge the financial and service gap in the water and sanitation economy. In 2022, it developed a climate policy, with the aim of ensuring that all its projects and programmes consider climate in all aspects of their work. The policy focuses on supporting financial institutions in their adherence to regulatory climate risk management requirements.

Aqua for All's climate policy commits it to support financial institutions in developing a better understanding of the exposure of water, sanitation and hygiene investments to climate hazards and their potential impacts. It also commits to undertaking climate risk assessments of financial institutions' portfolios and their potential borrowers, and to track the impact of their sector investments on the resilience of local communities and greenhouse gas emissions.

With the impacts of climate change increasingly apparent, financial institutions are now required to comply with regulatory requirements on climate risk. Aqua for All has integrated climate change considerations into a toolkit, which includes orientation sessions, climate questions, and climate indicators. The toolkit will help financial institutions to consider climate change impacts on their investments and ensure alignment with regulatory requirements and efforts to reduce greenhouse gas emissions.

Photo credit: Lalaina Raoelison

In 2020, Sidian Bank in Kenya became the first financial institution to work with Aqua for All. The partnership initially did not include climate considerations in its design or objectives. However, Aqua for All was able to work with the bank to review its water, sanitation and hygiene portfolio, which included the percentage of the portfolio likely to increase resilience and reduce greenhouse gas emissions. The work is already assisting Sidian Bank to become more climate-resilient and comply with regulatory requirements.

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Photo credit: Lalaina Raoelison

CASE STUDY

Spurring investments through Peru's 'Payments for Ecosystem Services' scheme

THEMES: **external support agencies, utilities, innovative finance, tariffs**

Peru's long-term water security is precarious. It has endured increased droughts, fires, floods, and landslides, and the loss of more than half of its glaciers over the last half century, as a direct result of climate change. Peru's Natural Infrastructure for Water Security (NIWS) project was launched in response to this increasing water insecurity, as a joint initiative by USAID and the Government of Canada. The project aims to promote investments in nature-based solutions, to enhance water security in Peru.

NIWS has successfully financed these investments through various sources, including an innovative 'Payment for Ecosystem Services' (PES) scheme. The scheme allows water utilities to earmark and use a portion of water user tariffs to protect and restore upstream water sources. In 2021, NIWS supported Lima's water utility in their first investment under the PES scheme, which is working to restore an important wetland in the high Andes. Additionally, NIWS supported the Lima utility to design and implement the first PES contract to build a plant nursery. This allowed water utilities to execute PES funds more efficiently while incentivizing communities to be good stewards of the land.

Photo credit: Michell Leon

Photo credit: Arlene Villanueva

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CONCLUSIONS

The case studies from SWA partners in this Compendium outline the undeniable impacts of climate change on water, sanitation and hygiene services across the world. They also demonstrate that there are huge opportunities to contribute to global adaptation and mitigation goals, by working to build a climate-resilient and low-carbon water, sanitation and hygiene sector. Indeed, the experiences of partners point to how investments in climate-resilient services must be a crucial element of the solution to the global climate crisis.

Photo credit: Jannatul Mawa

Supporting climate adaptation and climate-resilient services makes sense from a financial point of view, both for governments and users. It fosters community resilience by reducing human, social, environmental, and physical vulnerability. It also contributes to avoiding or reducing conflict in areas affected by water scarcity. It provides an opportunity to policy makers and service providers to rethink access to basic services, adhere to a circular economy and green growth, and improve several pending aspects of service provision.

The stories also remind us that there are huge and untapped opportunities for mitigation, by improving water and energy efficiency, and by ensuring, where possible, the use of renewable energy (such as solar and wind energy) for water and sanitation operations. There are significant benefits to be gained, too, from cutting sector greenhouse gas emissions – for example through choosing the most appropriate type of sanitation and treatment processes for wastewater and excreta disposal.

The water, sanitation and hygiene sector can contribute to achieving the Paris Agreement goal of mobilizing US$ 100 billion per year for mitigation and adaptation needs of developing countries, by supporting the mobilization of climate finance. In this regard, the water, sanitation and hygiene sector is working to make investments in climate-resilient services attractive, and is exploring new avenues to team up and work with financiers.

This Compendium offers many insights on how the SWA partnership is already seizing the initiative in these areas, forging links between climate action and the water, sanitation and hygiene sector around the world. These experiences can act as inspiration for the sector, and beyond, as we seek to shore up efforts to adapt, mitigate and grow, with the effects of climate change gathering pace in the years ahead.

In the Race to Resilience and the Race to Zero, countries, regions, cities, investors, civil society, private sector, and research and learning institutions are all acting to transform the prospects of billions of people. This Compendium offers a snapshot of how we can all contribute to those efforts. Beyond the finish lines, a safer, healthier, more sustainable and cleaner world awaits.

SANITATION AND WATER FOR ALL

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RACE TO RESILIENCE