

# Catalyzing the inclusion of Water, Sanitation and Hygiene (WASH) in Tanzania's Nationally Determined Contributions (NDCs)

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## Abstract

Tanzania continues to experience more frequent precipitation extremes such as droughts and heavy rainfall. These temperature and extreme weather events particularly droughts, heavy rains and flooding are predicted to increase further in both frequency and severity in the future. According to various studies these impacts are expected to include profound changes in water availability among other implications. The Government of Tanzania (GoT) estimates the annual economic costs of addressing climate change impacts to be about 1% of the country's GDP. This figure could rise to 2% by the year 2030. As part of its climate change response plans, Tanzania has ratified the Paris Agreement and is currently reviewing its Nationally Determined Contributions (NDCs). The nexus between Water Sanitation and Hygiene (WASH) and NDCs in the Tanzania policy framework falls within the Water, Health, and Waste Management sectors. Review of the NDCs shows an implicit inclusion of WASH but only as it relates to water resource management and health as adaptation priorities, and waste management as a mitigation priority. The NDC WASH commitments do not fully cover global WASH indicators and do not explicitly articulate the linkages between WASH and implementation in the areas of Water, Health and Waste Management. Given the change of context since 2015 and in the circumstances of COVID19, which has created further challenges in WASH service delivery, the government should consider integrating relevant WASH targets in the ongoing NDCs review process to speed up its commitment to reduce green emission, boost sufficient availability of quality water, and thus positively impact sanitization practices.

**Keywords:** climate change, water sanitation and hygiene, nationally determined contributions, Tanzania

## Key Policy Insights

The Tanzania NDC has singled out water resources as an area for climate change adaptation but has remained silent on the use of climate change technologies in realizing the priority.

The NDC fails to express the explicit linkages between WASH and implementation in priority areas of Water, Health and Waste Management.

Management of waste is an area within the health sector that could have been explicitly addressed due to its direct link to emission targets through the use of incineration technologies.

Climate change impacts such as droughts and floods worsen the COVID19 recovery response as well as access to WASH services, which are critical to COVID response in country.

Despite little WASH inclusion in the NDCs, Tanzanian has made progress in integrating NDC-related climate change provisions in other national WASH-related policy documents.

## 1. Introduction

Tanzania is one of many nations experiencing the impacts of climate change in the economic, environmental, and social sectors. One of the key sectors that is source, victim, and the solution to climate challenges is the Water,

Sanitation, and Hygiene (WASH) sector. Research ranks climate change as being the top risk constraining the achievement of water and sanitation targets, but also provides evidence that attaining WASH targets helps in addressing climate challenges (USAID, 2020).

Tanzania's water resources are in abundance but are rapidly declining due to, amongst other factors, climate change impacts that includes frequent and severe droughts, the associated water scarcity issues, and contamination and/or depletion of surface water and groundwater. The effects of climate change on the WASH sector have resulted in reduced quantity and quality of water and sanitation services, and of food production. It has also led to a slower pace of poverty reduction, and exacerbated climate change-induced effects on settlements, misplacement of communities and migrations, water user conflicts, and in some areas political instability.

National improved water coverage is only 60 percent, meaning that some 21 million people in Tanzania lack access to an improved water source. Rural areas have the worst improved water coverage—48 percent compared to 87 percent in urban areas. Improved sanitation reaches a mere 20 percent of the population nationwide, meaning that many Tanzanians, some 43 million people, are relying on rudimentary, unimproved facilities (World Bank, 2018).

The nexus between climate change and WASH means that climate related initiatives should strongly consider WASH components, and vice versa. The Health National Adaptation Plan (HNAP 2018-2023) projects an increase in the impact of climate change on WASH in Tanzania, but also indicates that the consideration of climate change in WASH projects is not significant. This is despite the fact that increasing WASH levels is likely to reduce underlying vulnerability to climate-sensitive diseases.

As part of its response to climate related challenges, Tanzania has ratified global climate change initiatives including the Paris Agreement (PA) (Note 1). The PA aims for a reduction of greenhouse gases (GHGs) emissions and holding the global warming below 2 degrees Celsius, and possibly attaining a more ambitious 1.5 degrees Celsius limit. In fulfilling its international climate related obligations, Tanzania developed and adopted the National Adaptation Plan (NAP, 2015), and the Climate Change Strategy (2012). There are also efforts at sectoral level, for example water safety plans and resilience to climate change for rural water supply services were developed in the water sector in 2015. The National Climate Smart Agriculture Programme (2015), National Climate Smart Agriculture Guideline (2017), and the National Climate Smart Agriculture Country Profile (2017) were developed in the agriculture sector as well. Furthermore, the Health-National Adaptation Plan (HNAP) to Climate Change for 2018 - 2023 is developed to guide development of climate resilient systems in the health sector (United Republic of Tanzania (URT) 2018).

In line with the required process for submission of the Nationally Determined Contributions (NDCs) (Note 2). Tanzania first submitted to UNFCCC the Intended National Determined Contribution (INDCs), which were developed through a consultative process in 2015 with representatives from Civil Society Organizations (CSOs), academia, research institutions, the private sector, and government institutions (Note 3). In the preparation of the INDCs, climate change documents such as the Initial National Communication (INC) and Second National Communication (SNC) were used as primary sources of information. Mitigation scenario analysis made use of data from the Baseline (Business as Usual) which was drawn from the year 2000 for projection scenario. The preparation of Tanzania's INDCs was further aligned with the Tanzania Development Vision (2025), Zanzibar Vision (2020), Tanzania Five Year Development Plan (2011/12-2015/16), the National Climate Change Strategy (2012), and the Zanzibar Climate Change Strategy (2014).

Upon ratification of the Paris Agreement in May 2018, Tanzania confirmed its INDCs, thus turning them to NDCs. The PA requires that each Party communicates a revised NDCs every 5 years, indicating a progression beyond the party's current NDCs and its highest possible ambition while recognizing its 'common but differentiated responsibilities and respective capabilities, in the light of different national circumstances' (UNFCCC, 2015).

Five years have passed since the submission in 2015, therefore, the government of Tanzania is currently undertaking a review of her NDCs to make it more effective in achieving its intended climate goal of reducing emissions. The review process is currently waiting for the Inter-ministerial Technical Committee (IMCT) approval for submission of the revised NDCs to the UNFCCC which will consequently trigger the implementation of NDCs in the country.

In doing so, the government has invited stakeholders to submit their inputs on how the 2015 NDCs can be strengthened and submit WASH data and information to influence for inclusion of WASH in the NDCs review process. Given the strong nexus between climate change and WASH sector, this paper depicts the extent of inclusion of WASH priorities in the Tanzania's 2015's NDCs, the existing gaps, and provides evidence-based recommendations on why and how NDCs can effectively include WASH commitments.

## 2. Methods

Leveraging the 2021 NDCs review process and particularly in the time of COVID 19 challenges, the Pan African Climate Justice Alliance (PACJA) and Forum on Climate Change (FORUMCC) in Partnership with WaterAid East Africa Region conducted a rapid assessment through stakeholder consultations and desktop study of Tanzania's NDCs to identify the WASH-related gaps, especially those that relate to COVID 19 recovery plans and climate change adaptation, respectively. The aim was to produce an outcome that will inform future NDCs review processes in Tanzania. Primary information was gathered through physical and virtual consultation sessions with Government, CSOs, the private sector, and academic institutions (Note 4). Secondary data were collected through an intensive review of both government documents and published literature. The reviewed documents included the review of The Five Years Development Plan (FYDP), Water Sector Development Plans (WSDP), National Water Policy, Reports from Development partners in Water sector, Policy brief, Fact sheets and other relevant information from Government and CSOs.

## 3. Results

The basic effects of climate change in the water sectors which results in compromised WASH initiatives is not yet clear, but floods and droughts are key climate change extremes that affect the sectors (WaterAid Tanzania 2016). In this case, the changing climate affects WASH initiatives through impacts on basic water services as a result of its extremes or other climate induced losses and damage, which may directly or indirectly affect the supply and delivery of water, sanitation, and hygiene (GWP & UNICEF, 2014). Hotter temperatures alter global weather patterns and change how and where precipitation falls. While drought creates water scarcity, floods can contaminate drinking water supplies, increasing the risk of water-borne diseases and illnesses spread by disease-carrying insects, such as mosquitoes (NRDC, 2021) (Note 5).

This evidence suggests that WASH in the context of climate change is an important aspect and requires proper WASH programmes integrated into climate change adaptation and mitigation initiatives. To attain a high level of effectiveness and a foundation for successful implementation and results, the integration of WASH aspects in climate change strategies must be in line with international directives, which place the key WASH indicators along three main areas, namely: basic sanitation and services; basic water services (water availability and access); and basic hygiene services and facilities (WHO & UNICEF, 2018).

In the Tanzania NDCs, WASH indicators are covered only implicitly. For instance, there is commitment to promoting integrated water resources development and management practices; investment in protection and conservation of water catchments, including flood control and rainwater harvesting structures; promoting wastewater reuse and recycling technologies; and development and exploitation of groundwater resources (URT, 2018). Allocation of resources in the sector can lead to resilient water catchment areas, and reduced flood effects on water sources and water delivery infrastructure. Under the health sector, the adaptation contribution will be achieved by focusing on areas that have some relevance with WASH, namely the promotion of sustainable and climate sensitive health and sanitation infrastructure.

Despite the presence of water resources and health as adaptation contribution priorities, and waste management as a mitigation contribution priority, the NDCs WASH commitments do not fully cover the global WASH indicators. Also, the NDCs do not clearly articulate the WASH component in relation to how it is affected by climate change and how proper WASH behaviors can improve realization of positive climate results.

The NDC document fails to express the explicit linkages between WASH and implementation in the NDC focus areas of water, health, and waste management. The mentioned priority areas are only partially linked to WASH, i.e., flood control and rainwater harvesting structures in the water sectors, and promotion of sustainable and climate sensitive health and sanitation infrastructure in the health sector.

The NDCs does not contain clear examples of climate change technologies, e.g., management of landfills/sanitation and promotion of non-incineration technologies in treatment of health care and commercial waste. In addition, the NDCs does not pay sufficient attention to liquid waste management, which contributes significantly to GHG emissions. Moreover, there is no clear and explicit articulation of how liquid waste will be controlled or transformed into other products which are climate compatible, e.g., inclusion in the *waste to energy* technologies. It should be noted with concern that liquid waste constitutes among the leading wastes in WASH processes and it possess climate change effects. However, only solid waste is mentioned in the NDCs in a general way without providing clear way forward in relation to GHG emissions and WASH integration. The NDCs positively mentions "wastewater reuse" under the water resource management, which is an appreciated initiative, but it could have yielded more results if it was outlined as one of the initiatives in waste management and complement specific initiatives under liquid waste management.

Despite little WASH inclusion in the NDCs, Tanzania has made progress in integrating NDC-related climate change provisions in other national WASH-related policy documents. The Water Resources Management policy / National Water Policy (2002) includes the promotion of investment in the protection and conservation of water catchments, including for flood control and rainwater harvesting. Unfortunately, no climate resilient strategic measures have been stated in the policy nor in the NDCs. Similarly, the National Water Sector Development Strategy (2006) identified climate change as one of the threats challenging the water sector but does not go a step further in identifying specific actions on climate change mitigation or adaptation, such as building community climate resilience in water-stressed areas.

The current Water Sector Development Programme (2006-2025) promotes sustainable and climate sensitive health and sanitation infrastructure, clearly in line with the NDCs. However, it lacks the institutional framework and financing mechanism for promoting climate sensitive WASH projects. This is a gap also seen in the Tanzanian Five Year Development Plan II (FYDPII), which also does not have clear indicators to track climate actions as far as WASH projects are concerned. Nonetheless, the FYDPII does also note the climate related challenges to the effective implementation of the plan. A similar situation can be found in the Water Supply and Sanitation Act (2019) and the National Sanitation Campaign (2012), which both recognize the obstacles that climate change effects, but unfortunately do not offer a framework to address those challenges.

Finally, the Water Safety Plans do offer a systematic framework to manage climate-related risks by considering the implications of climate variability and change at each step of the water supply system, making them well in line with NDCs commitments. They are also burdened however by a lack of coordination and financing mechanism to promote and deliver on climate sensitive WASH projects.

#### **4. Discussion**

It is important for NDCs to cover WASH components as the development and management of water resources is intimately linked to Tanzania's ambitions for inclusive and sustainable growth enshrined in the TDV 2025 and committed to under the SDGs. Achieving water security to support growth and build climate resilience is key to sustain livelihoods and achievement of TDV 2025 (USAID, 2020) and if Tanzania's low capacity for climate resilience is not addressed, this will likely have a profound impact on WASH and public health, retarding future development in urban and rural settings alike (URT, WHO & DFID 2018).

For climate responses in Tanzania, and the efforts put in place to curb climate change effects on the WASH chain especially in the health sector, the focus is on building the sector's resilience and not on how WASH processes can be undertaken with minimal or no effects on the climate especially on controlling emissions. For example, waste management in HFCs includes incineration processes using different technologies in terms of facilities, energy for operating temperature, loading of materials and ways to control the emitted flue gases. Evidence indicates that the more time spent on incineration, the more the emission of CO<sub>2</sub>, and this is applicable to other GHG gases which are produced during the incineration process.

Findings showed that in the legal and policy framework, WASH is well anchored in the National Health Policy (2007); the National Water Policy (2002) which is under review; the National Environmental Policy (1997) also under review; the Community Development policy (1996); the Public health Act (2009); the Water Supply and Sanitation Act No. 5 (2019) which provides for water supply and sanitation in both rural and urban areas; and the Water Resources Act No. 20 (2009) which provide guidelines for institutional and legal framework for sustainable management of WASH interventions. Nonetheless, there still remains policy and institutional gaps that significantly reduce the efficiency and effectiveness of the policies in relation to implementation of WASH. Out of the WASH-related policy documents reviewed, all of them demonstrated gaps related to climate change planning, particularly lacking in identifying specific actions for climate mitigation or adaptation and in having an institutional framework and financing mechanism that promote climate sensitive WASH projects.

Under the supervision of the Vice President's Office- Division of Environment (VPO-DoE), Tanzania put in place five-year implementation plans (2020-2025) for both Mainland & Zanzibar, setting out actions for executing the country's Nationally Determined Contributions (NDCs) to the Paris Agreement under the UNFCCC (URT, 2019).

The actions cover both adaptation and mitigation initiatives to enhance long-term resilience to the adverse impacts of climate change and contribute to greenhouse gases emission reduction efforts, focusing on priority climate sensitive sectors that include agriculture; forestry; water; energy; coastal, marine and fisheries; tourism; human settlement; health; infrastructure; and disaster risk reduction. The NDCs implementation plans have considered all the political economy landscape of climate change governance in the country including an estimated budget for implementation, providing strong foundation for WASH targets to be realized. However, the means of financing

the Mainland and Zanzibar plans limit effective implementation of WASH service provisions especially in rural communities which are more vulnerable to climate change impacts and pandemics.

Tanzania has signed up to the SDGs which, amongst other targets, call for universal access to safely managed water and sanitation by 2030. To meet those targets, the country will need to have technologically improved water and sanitation facilities but also meet the high standards on quality of services, both areas that require a climate-smart approach. However, Tanzania's performance during the MDG period was below standard. It was one out of only 17 countries globally who could not meet the MDG water target, and one out of 69 that also could not meet the sanitation target. Compared to its East African neighbors and the Sub-Saharan region, Tanzania had the smallest gains in improved water coverage during the MDG period and, despite making progress in sanitation, had the second worst improved sanitation coverage (World Bank, 2018). The slow progress makes achievement of the SDGs appear difficult, but the NDCs thus provide an opportunity to revitalize commitment to climate-resilient WASH services and infrastructure.

From an institutional perspective, technical and managerial capacity gaps, and lack of coordination between actors at the national, regional, district, and community levels further exacerbates the limitations in the provision of WASH services. The Ministry of Water is responsible for policies, planning and strategies formulation but relies on other Ministries, Departments, and Agencies (MDAs), as well as regional, district, and community-level institutions to deliver results and financing on WRM and WASH.

The challenges in prioritizing and implementing WASH within the NDCs implementation have been further compounded by the COVID 19 pandemic, including the postponement of the November 2020 COP26 summit. Although the pandemic has driven people to adopt WASH practices as precautionary measures, climate change impacts such as droughts and floods worsen COVID 19 recovery response and the accessibility of adequate WASH services. Thus, supporting WASH service provision with workable and climate resilient strategies can support local communities to adapt even in the face of a pandemic.

## 5. Conclusions and Recommendations

- Tanzania remains vulnerable to the impact of climate change in various sectors. As part of its response, key policies, plans and strategies within the country identify how priority areas of implementation have included a moderate range of WASH inclusion. The country has also developed and committed to implementing the NDCs which lay out key climate change actions across all relevant sectors.
- The NDC includes water resources and health as adaptation contribution priorities, and waste management as a mitigation contribution priority, but the WASH commitments do not fully cover the global WASH indicators and do not sufficiently articulate how the WASH component is affected by climate change and how it can improve the realization of positive climate results.
- The NDCs do not include key climate change technologies, even in areas such as waste management at health facility level. The policy and strategy coordination mechanism is complex and intertwined, leading to poor coordination between the different ministries and government departments.
- Most recently, the COVID 19 pandemic has demonstrated the importance of investing in climate resilient WASH. Climate change impacts such as droughts and floods worsen COVID 19 recovery response and the accessibility of adequate WASH services, thus undermining the resilience of communities.
- The government, civil society, academia, and development partners should invest sufficiently in generating robust data regarding the climate change and WASH nexus and use that evidence to influence the more systematic inclusion of WASH in climate change mitigation and adaptation strategies with the NDCs. The government should create an enabling environment for private sector participation through piloting PPP structures in the delivery of WASH services. Incentives can be put into place to ensure WASH services are climate resilient and includes transfer of green technology. Technology adaptation and use should be encouraged by state and non-state actors at all levels to build resilience and reduce emissions. This can include incineration technology, and water and sanitation infrastructure technology. The government, with support from non-state actors, should establish an integrated framework to implement WASH plans in line with the NDCs, with a requisite coordination, funding, and implementation mechanism.

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## Notes

Note 1. Adopted in 2015. The Agreement has 196 Parties.

Note 2. Article 4 (2) of the Paris Agreement requires state parties to prepare, communicate and maintain successive nationally determined contributions that it intends to achieve.

Note 3. On 29th September 2015, Tanzania submitted its NDCs at the UNFCCC prior the universal agreements held in Paris in December 2015.

Note 4. Stakeholders Consultations Session was held on 19th February 2021 at FORUMCC.

Note 5. <https://www.nrdc.org/stories/paris-climate-agreement-everything-you-need-know#sec-summary>

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