

# Inclusion of Water, Sanitation and Hygiene in Ethiopia's Nationally Determined Contributions 2020 Update Process- A Policy Brief

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## Abstract

Ethiopia has made large strides in water supply, sanitation, and hygiene (WASH) given rapid urbanization and a steadily increasing population. The country has developed several policies and plans that focus on improving the WASH sector. Simultaneously, the Government of Ethiopia has also developed several policies that tackle the impacts of climate change and aim to reduce Greenhouse Gas (GHG) emissions by adapting sustainable climate resilient practices. The WASH sector plays a significant role in climate change as it contributes to GHG emissions but is also negatively affected by the impacts of climate change. In spite of the clear connection between the WASH sector and climate change Ethiopia's NDCs do not fully address the mitigation and adaptation measures possible with water resources, sanitation, and waste management. There is growing evidence based on studies that globally emissions from sanitation and domestic wastewater are expected to rise significantly in the future. The sectoral approach in the preparation of the Ethiopia NDCs, rather than an integrated multi-sectoral approach risks missing out on important interactions and cross-cutting issues.

## Key Policy Insights

1. Ethiopia's NDCs largely focus on limiting GHG emissions from agricultural and industrial sectors while water, which is a key element for the performance of other sectors, is less prioritized in the NDC.
2. While the need to address climate change through water is well recognized, this is not being translated into concrete action.
3. While the Ethiopia Climate Resilient Green Economy (CGRE) strategy included GHG reduction emissions goals on waste management, these are not included in the NDC.
4. The Ethiopian NDCs do not mention waste-related mitigation and adaptation measures.
5. Sanitation is largely ignored in the NDC despite being a sector that both impacts and is impacted by NDC.
6. There are no detailed activities or resources for the proper implementation of NDC.

**Keywords:** WASH, Sanitation, Ethiopia, NDC

## 1. Introduction

Ethiopia has achieved significant progress in terms of extending safe water supply, sanitation, and hygiene (WASH) services to the alarmingly growing population. However, water resources are unevenly distributed across the country. The largest proportion of water resources (80-90 per cent) is found where there is only 30-40 per cent of the population. The main source of water for the majority of the rural and small-town populations is community-managed water supply systems (Ministry of Water, Irrigation and Energy [MoWIE], 2015a). The challenges with community-managed water supply systems include frequent breakage, poor operation, management, and contamination. Shallow water sources are highly susceptible to climate change which means that prolonged dry seasons cause community water systems to dry up leading to water shortages and increased concentration of chemical contaminants. In response to the climate-related risks, the government of Ethiopia established a WASH

Emergency Task Force that comprises sector ministries and development partners (MoWIE, 2015b). The Task Force monitors the frequency of the occurrence and distribution of water supply emergency situations, jointly discusses, and develops plans, and takes quick actions. Water supply service provision is the role of urban utility whose efficiency and effectiveness can be attained through the application of water safety plans (WSP (Note 1)). *Nationally Determined Contributions* (NDC) are actions that countries party to the UNFCCC plan, based on their national contexts, will contribute towards the achievement of the global goal of limiting temperature increase to below 2°C. The NDCs submitted by parties represents the main climate change policy framework for countries to the UNFCCC.

A rapid assessment was conducted to identify the gaps in the Ethiopian NDCs as they related to WASH. It analyzed the country's NDC and WASH-related national documents, identified the gaps and suggested recommendations for the assimilation of WASH-related NDCs in the upcoming version.

## 2. Methodology

A rapid assessment conducted to inform this paper employed multiple methods which included a desk review of relevant documents and in-depth interviews with officials from the WASH Ministry and the Environment, Forest, and Climate Change Commission (EFCCC) which complemented the review findings. The review covered Ethiopian NDCs, CRGE strategy, the Paris Agreement, WASH policy documents, and other relevant literature. Interviews aimed at collecting opinions of experts on the importance of considering WASH adaptation and mitigation strategies in the Ethiopian NDCs, and the policy directions as to how the country achieves economy-wide emission reductions.

## 3. Results

### Enabling Policies

The Government of Ethiopia introduced Health Policy in 1993, Water Resources Management Policy in 1999, Water Sector Strategy in 2001, Water Sector Development Plan in 2002, and the Health sector development program, which is revised every five years. In 2005, Ethiopia, with the support of development partners established the WASH sector and prepared the Universal Access Plan (UAP), and in 2006, signed a Memorandum of Understanding between the WASH Ministries, which was later revised in 2012. In 2013 the government introduced WASH Implementation Framework (WIF) that guides the development, implementation, monitoring and reporting of the programme. In the same year, Ethiopia introduced One WASH National Programme (OWNP), which is a multi-sector wide programme.

In response to climate change, Ethiopia has developed a series of actions including the National Adaptation Programme of Action (NAPA), Nationally Appropriate Mitigation Action (NAMA), Ethiopia Programme of Adaptation to Climate Change (EPACC), Climate Resilient Green Economy strategy (CRGE) and National Adaptation Plan (NAP). These plans and policies aim to coordinate climate change adaptation and mitigation activities across government sectors, reduce and measure GHG emissions, reduce vulnerability to the impacts of climate change by building adaptive capacity and resilience, as well as create a foundation for a carbon-neutral and climate-resilient path towards sustainable development in the country. The EPACC links climate change adaptations with other programmes and aims to create a foundation for a carbon-neutral and climate-resilient path towards sustainable development in the country. The programme identifies twenty climate change risks and the institutions responsible to mitigate each risk. Urban waste accumulation, dwindling water supply and displacement as a result of environmental stress and insecurity are among the climate risks identified. Also, the adaptation strategies identified under the programme are renewable energy, climate change adaptation education, capacity building, research and development, enhancing institutional capacity, and building political momentum, among others. The programme sufficiently captures the increasing threat of climate risks and suggests the importance of mainstreaming climate change in development policies, planning, and implementation processes.

Ethiopia developed National Adaptation Plan (NAP) in 2019 that aims to reduce vulnerability to the impacts of climate change by building adaptive capacity and resilience. It also aims to strengthen holistic integration of climate change adaptation in the country. It is guided by the principle of participation, coherence, stakeholder empowerment, gender sensitivity, equitable implementation and partnership. NAP focuses on sectors identified as the most vulnerable to climate change, including agriculture, forestry, health, transport, power, industry, water and urban. Under these sectors it identified eighteen adaptation options, which among others, include improving access to potable water, strengthening sustainable natural resources management, improving soil and water harvesting and water retention mechanism, and improving human health systems.

## ***NDCs***

As part of the Paris Agreement countries developed NDCs that include mitigation contributions, adaptation planning, financial support, technology transfer, capacity building and transparency. Ethiopia, as party to the convention, developed its *Intended Nationally Determined Contributions* (INDC) and submitted to the UNFCCC in June 2015. After serving for two years, the INDC was later converted into Ethiopia's first NDC when Ethiopia ratified the Paris Agreement on the 9<sup>th</sup> of March 2017 (Federal Democratic Republic of Ethiopia [FDRE], 2020). The total emission reduction target was 53.5 percent and the estimated resources required for the conditional and unconditional measures for both adaptation and mitigation totals to 294.73 billion dollars, with 20 percent of this being covered by the government. Ethiopia NDC is a sector wide commitment to the CRGE vision and articulates what every ministry should adhere to, in order to build and sustain a green economy. The NDC emphasizes the potential synergies between adaptation and mitigation. The plan for financing the implementation of NDC is the government budget for unconditional actions and the global climate financing for the conditional interventions. There are also potential sources of finances from bilateral and multilateral partners as well as the private sector. All the financing is meant to flow through the CRGE facility.

## ***NDCs and WASH***

Ethiopia is one of the countries prone to climate risks. Climate actions involve mitigation and adaptation measures (Intergovernmental Panel on Climate Change [IPCC], 2007). The WASH sector plays a vital role in building resilience (Note 2) to changes in climate. Ethiopian NDCs should capture adaptations and mitigation measures as it relates to WASH because the WASH sector is not only adversely impacted by climate change and extreme weather events, it also contributes to GHG emissions. Without prioritizing water in the adaptation and mitigation interventions, it is not possible to meet the targets set in other sectors. CO<sub>2</sub> emission from the sanitation sector is in the form of indirect emissions through the energy used in the treatment and pumping. In spite of the fact that some aspects of water are considered in adaptation interventions in NDCs (UN Water, 2016), there are reasons to believe that sanitation is largely ignored. If sanitation facilities are damaged by extreme weather events as a result of climate change, and people lack access to sanitation, it ultimately results in the spread of diseases (WHO, 2018). Globally emissions from the wastewater were estimated to be about 5 percent of the GHG emissions (Bogner et al., 2008) resulting mainly from Methane which is produced by wastewater as a result of anaerobic decomposition of organic matter. Advanced wastewater treatment processes contribute to reduced GHG emissions and at the same time supplying biogas as a source of renewable energy. Thus, wastewater facilities need to be resilient to climate risks and are an important part of the solutions to climate change (UN Water, 2020).

Moreover, while the need to address climate change through water is well recognized, this is not being translated into concrete action. Waste management is a huge challenge for developing countries like Ethiopia. Solid waste collection and landfill management throughout the country is the responsibility of municipality administrations. The challenge is that 43 percent of Municipal solid waste generated in Ethiopia was collected for disposal in unmanaged landfill while the rest remains in the streets or is dumped in spaces.

## **4. Discussion**

Preparation of the NDC followed a sectoral approach which risks missing the important interactions and cross cutting issues (UNDP, 2020). It largely focuses on limiting GHG emissions from agriculture, forestry, transport, energy, industry and building sectors while the fact that all sectors depend on reliable water supply, which is almost none-existent in Ethiopia's NDC.

The current NDC only mentions water as a means for improving the irrigation system, the ecosystem, and to ensure continuous availability of water service for urban populations. Hence the water sections of Ethiopia's NDCs are not specific on adapting water to climate change. They do not outline clear-cut interventions, nor do they make provisions for the resources required for implementing actions regarding urban water supply.

The Ethiopian NDCs do not mention waste related mitigation and adaptation measures. Sanitation, as part of the waste sector, is also not mentioned despite the fact that the waste sector contributes to GHG emissions and is impacted by climate change. The NDCs should have given sufficient attention in setting the mitigation and adaptation targets. Even for the indicated adaptation and mitigation measures in Ethiopia's NDCs there is no detailed activities and resources for the proper implementation of the NDCs.

The CRGE strategy included GHG reduction emissions goals on waste management but these are not included in the Ethiopian NDCs and should be incorporated as targets.

## **Recommendations for mitigation measures**

- It is now vital that include WASH sector in the next NDCs by having an inclusive and participatory revision system, as well as conducting an assessment of the potential GHG emissions of the WASH sector including waste and sanitation to set WASH related emission targets that will appear in the next NDC.
- Incorporate the GHG emission targets set for the waste sector under the CRGE strategy in the NDC
- Include wetland management as well as proper water management and waste treatment practices in the mitigation strategies to reduce GHG emission.

#### **Recommendations for adaptation measures**

- There is need to assess and identify possible WASH adaptation interventions to cope with climate change, and mainstream in the upcoming version of Ethiopian NDCs, and climate related strategies. Some of which would include:
- identifying climate resilient WASH technologies to resist climate change related risks and prevent WASH related disease outbreaks.
- Strengthening groundwater regulation and monitoring to ensure increased availability of surface water,
- proper management of sanitation systems to prevent the groundwater from pollution through latrine and leaking sewers.

#### **5. Conclusion**

While Ethiopia's government has made great efforts to enact policies, strategies and structures for planning and implementation, the efforts are not sufficiently integrated and aligned. The Ethiopian NDCs show major gaps when it comes to the role and place of the WASH sector in climate mitigations and adaptation actions. Water is less prioritized in the NDC, explicitly including water adaptation and mitigation measures has the potential to accelerate the achievement of GHG emission reductions through improving the performance of other sectors. The Ethiopian NDC misses relevant sanitation mitigation and adaptation measures despite studies indicating that the sanitation and wastewater sector have significant GHG emissions contributions and can also be used as potential mitigation measures. The collection, treatment, reuse, and recovery of wastewater could be considered as a growing source of GHG emissions. There is an urgent need for basic hygiene facilities to prevent the spread of communicable diseases, but these facilities need to take into consideration climate related risks. Adaptation in water management and proper wetland management can also contribute to the mitigation of GHG emissions from the water and sanitation sector.

#### **References**

- Bogner, J., Pipatti, R., Hashimoto, S., Diaz, C., Mareckova, K., Diaz, L., ... Gregory, R. (2008). Mitigation of global greenhouse gas emissions from waste: conclusions and strategies from the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report. Working Group III (Mitigation). *Waste Management & Research: The Journal for a Sustainable Circular Economy*, 26(1), 11–32. <https://doi.org/10.1177/0734242X07088433>
- Federal Democratic Republic of Ethiopia, Ministry of Environment and Forest. (2015). *Ethiopia National Communication to the United Nations Framework Convention on Climate Change*. Retrieved from <https://unfccc.int/resource/docs/natc/ethnc2.pdf>
- Federal Democratic Republic of Ethiopia, Ministry of Water Resources. (1999). *Water Resources Management Policy*.
- Federal Democratic Republic of Ethiopia, Ministry of Water Resources. (2001). *Water Sector Strategy*. Retrieved from <https://chilot.me/wp-content/uploads/2011/08/water-strategy.pdf>
- Federal Democratic Republic of Ethiopia. (2007). *Climate Change National Adaptation Programme of Action (NAPA) of Ethiopia*. Retrieved from <https://www4.unfccc.int/sites/NAPC/Documents/Parties/NAP-ETH%20FINAL%20VERSION%20%20Mar%202019.pdf>
- Federal Democratic Republic of Ethiopia. (2011). *Ethiopian Climate Resilient Green Economy, Green Economy Strategy*. Retrieved from <https://www.undp.org/content/dam/ethiopia/docs/Ethiopia%20CRGE.pdf>
- Federal Democratic Republic of Ethiopia. (2015). *Ethiopian Intended National Determined Contributions*. Retrieved from <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Ethiopia%20First/INDC-Ethiopia-100615.pdf>
- Federal Democratic Republic of Ethiopia. (2018). *One WASH National Programme*. Retrieved from

- <https://www.unicef.org/ethiopia/reports/one-wash-national-programme>
- Federal Democratic Republic of Ethiopia. (2019). *Ethiopia's Climate Resilient Green Economy, National Adaptation Plan*. Retrieved from <https://www4.unfccc.int/sites/NAPC/Documents/Parties/Final%20Ethiopia-national-adaptation-plan%20%281%29.pdf>
- Federal Democratic Republic of Ethiopia. (2020). *Ethiopian Update Nationally Determined Contributions*. Retrieved from [https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Ethiopia%20First/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission\\_.pdf](https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Ethiopia%20First/Ethiopia%27s%20updated%20NDC%20JULY%202021%20Submission_.pdf)
- Intergovernmental Panel on Climate Change. (2007). *AR4 Climate Change 2007: Synthesis Report*. Retrieved from <https://www.ipcc.ch/report/ar4/syr/>
- Ministry of Water, Irrigation and Electricity. (2015a). *Climate Resilient Water Safety Plan Guideline for Community Managed Rural Drinking Water Supplies*. Retrieved from [https://wsportal.org/wp-content/uploads/sites/3/2017/02/CR-WSP-for-Rural\\_Guidelines\\_by\\_CR...WSP-EDITED-GSh.pdf](https://wsportal.org/wp-content/uploads/sites/3/2017/02/CR-WSP-for-Rural_Guidelines_by_CR...WSP-EDITED-GSh.pdf)
- Ministry of Water, Irrigation and Electricity. (2015b). *Climate Resilient Water Safety Plan, Guideline for Urban Utility Managed Piped Drinking Water Supplies*. Retrieved from <https://wsportal.org/wp-content/uploads/sites/3/2017/02/Climate-Resilient-Water-Safety.pdf>
- Transitional Government of Ethiopia. (1993). *Health Policy*. Retrieved from <https://www.cmpethiopia.org/content/download/430/2603/file/Health%20Policy%20of%20Ethiopia%201993.pdf>
- UN Water. (2016). *UN World Water Development Report 2016, Water and Jobs*. Retrieved from <https://www.unwater.org/publications/world-water-development-report-2016/>
- UN Water. (2020). *The United Nations World Water Development Report 2020: Water and Climate Change*. Retrieved from <https://www.unwater.org/publications/world-water-development-report-2020/>
- UNDP. (2020). *Water Interactions to Consider for NDC Enhancement and Implementation, sectoral checklist to help climate change professional and decision makers identify water related issues*. Retrieved from <https://www.ndcs.undp.org/content/ndc-support-programme/en/home/impact-and-learning/library/water-interactions-to-consider-for-ndc-enhancement.html>
- World Health Organization. (2018). *WHO calls for increased investment to reach the goal of a toilet for all*. Retrieved from <https://www.who.int/news/item/01-10-2018-who-calls-for-increased-investment-to-reach-the-goal-of-a-toilet-for-all>

## Notes

Note 1. WSP stands for 'Water Safety Plan' which is a comprehensive risk assessment and risk management approach to identify and address priority issues that affect service delivery.

Note 2. The UN office of Disaster Risk Reduction defines 'resilience' as the ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard, and in a timely efficient manner including through preservation and restoration of its essential basic structure and functions through risk management.

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