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Climate Resilient WASH: working across SDG 6

Policy Brief

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Acknowledgements

The Policy Brief has been prepared based on the 2020 Wetlands International study of the Negele Arsi and Shashamane Woredas in the West Arsi Zone focusing on the effect of water scarcity, climate change, and environmental degradation on WASH services delivery. It has been discussed at the 4th Climate Resilient WASH Learning Platform Workshop in Batu/Ziway on 30th March 2022. The aim of the Policy Brief is to bring a number of issues to the attention of the sector decision makers so that necessary policy actions can be taken.

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Abbreviations

CSO	Civil Society organisations
GHG	Greenhouse Gas
GTP	Growth and Transformational Plan
IPCC	Intergovernmental Panel on Climate Change
IWRM	Integrated Water Resource Management
JMP	Joint Monitoring Programme
MALR	Ministry of Agriculture and Livestock Resources
MoEFCC	Ministry of Environment Forest and Climate Change
MoWIE	Ministry of Water, Irrigation and Electricity
NAP	National Adaptation Plan
NDC	Nationally Determined Contributions
OWNP	One WASH National Programme
SDG	Sustainable Development Goals
UN	United Nations
WASH	Water Sanitation and Hygiene
WRM	Water Resource Management

Executive summary

The most recent reportⁱ of the Intergovernmental Panel on Climate Change (IPCC) states that increases in frequency and intensity of extremes have reduced food and water security, hindering efforts to meet the Sustainable Development Goals. The impacts are affecting the regularity and equitable distribution of water, making it more difficult for the vulnerable to secure their waterⁱⁱ. Water is central to climate adaptation, and there is a strong need for adaptive capacity at all levels in the coming years.

This policy paper analyses climate resilient WASH (Water, Sanitation and Hygiene) at global, national, and local levels, focussing on the WASH SDG programme in Negelle Arsi and Shashamane woredas. This has resulted in three key messages for designing policies and planning implementation:

1. You cannot build community resilience to climate change without ensuring resilient access to water, including for the most basic needs – drinking, sanitation, and hygiene.

Within the wider policy frameworks such as the draft National Water Policy and Strategy (2020), the National Adaptation Plan (NAP)ⁱⁱⁱ, updated National Determined Contribution (NDC)^{iv}, and others, the role and importance of water in general and basic WASH services as a foundation for resilient communities should be continuously promoted. Recognising that investing in WASH is a triple win situation as it enhances resilience, public health, and economic growth. Investing in climate resilient WASH is therefore not only “the right thing to do”, but also makes economic sense.

2. Climate Resilient WASH can only be achieved if Integrated Water Resource Management (IWRM) and WASH are coordinated and taken up jointly.

Under the WASH SDG Programme, a 2020 study^v by Wetlands International in Negelle Arsi and Shashamane shows that per the projection, the available water is far less than the projected demand in future. The basic human right for water is recognised in the Growth and Transformational Plan (GTP 2)^{vi} (25 litre per person per day) and the draft National Water Policy and Strategy states that first water for basic necessities at the household level should be fulfilled followed by food security, and minimum eco-system needs. Environmental and social impact studies and management plans for big investment projects in agriculture and industry should be drafted taking local stakeholders into consideration. Key to this is the joint Government-Donor Water Sector Working Group (WSWG). Continued empowering of the WSWG, and giving it visibility, will strengthen development partners, and government institutions involved in the water sector would come together. The already existing Technical Committees on WASH and on Water Resource Management (WRM), is the right instrument to continue collaboration and cross collaboration.

3. Local led adaptation can be a strong driver for achieving SDG 6 target holistically.

The 2020 draft National Water Policy and Strategy indicates that water allocation plans should be developed at the level of the lowest possible water management unit, recognising that the basic minimum requirement (basic human and livestock needs) has the highest priority. This has been applied in the woreda-led approach in Negelle Arsi and Shashamane by local interventions in catchment protection that strengthen the WASH situation. Adaptations such as erosion prevention

(bund construction) have the added benefit of enhancing infiltration and recharging the aquifers. This increases the water availability in the area, making the groundwater a more secure water source for WASH and other activities^{vii}.

Global trends in Climate Resilient WASH

The WASH sector is working on a massive growth as the Joint Monitoring Programme (JMP) estimated that the rate of progress needs to be four times higher to achieve the WASH SDG targets. In 2020, still, 25% lacked safely managed drinking water services and half the world's population lacked safely managed sanitation^{viii}. Furthermore, 30% still lack basic hygiene and sustained progress in WASH in schools, and WASH in health care facilities is needed.

The drive of the sector to expand WASH services to the unreached is happening against a backdrop of increasing urbanisation^{ix}, population growth^x and increase in water consumption^{xi}. Furthermore, COVID-19 has highlighted the importance of hygiene as a preventive public health measure, and the added need to build resilient social, economic and health systems that are able to respond and adapt to new threats.

The 2021 Intergovernmental Panel on Climate Change (IPCC) report indicates that human-induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes in extremes include heatwaves, heavy precipitation, droughts, and tropical cyclones. The 2022 IPCC report on adaptation states that these extremes have reduced food and water security, hindering efforts to meet the Sustainable Development Goals.

Ninety per cent of disasters are water related and extreme weather events are leading to too much, too little, or too polluted water. Climate change disproportionately affects those who have least contributed to man-made global warming, but are carrying the greatest burden of climate change, as floods in Europe and Asia in 2021 showed. For the poorest people, the most immediate and widespread effects are felt through water – extreme droughts, sea level rises, vast floods, and powerful storms – these weather events multiply pressure on already overstretched water sources^{xii}. This is the epitome of climate injustice.

As the WASH sector is energy intensive, there is a growing recognition globally of the potential of the sector to contribute to worldwide climate mitigation efforts, through reducing emissions (renewable energy sources), increasing water and energy efficiency of operations (reducing non-revenue water), and supporting energy recovery (Biogas).

Water is central to climate adaptation, and there is a strong need for adaptive capacity at all levels in the coming years; services must be able to continue to function as needed under increased uncertainty and pressure, changing hydrological/hydrogeological conditions, and more frequent extreme weather events. Recognising that **you cannot build community resilience to climate change without ensuring resilient access to water** is reason enough to pursue climate resilient WASH, which is consisting of three objectives^{xiii}:

1. To ensure that WASH infrastructure, services and behaviours are sustainable, safe, and resilient to climate-related risks. This goes hand in hand with the sustainable use, protection and management of surface and groundwater resources, and resilient waste management.
2. To ensure that resilient WASH programmes contribute to building community resilience to help them adapt to the impacts of climate change. To achieve this, inequalities in service provision that disproportionately expose vulnerable groups to climate threats, or restrict their capacity to respond effectively, need to be addressed first.

3. To work towards a low-carbon WASH sector by improving water and energy efficiency and ensuring, where possible, the use of renewable energy for water and sanitation operations to reduce greenhouse gas (GHG) emissions, and energy generation from waste.

This shift towards climate resilient WASH is not only “the right thing to do”, it can also be cost effective according to recent studies of the World Bank^{xiv} and WaterAid^{xv}. The latter indicates that every dollar spent on strategic flood resilience upgrades could avoid at least US\$ 62 in flood restoration costs. IRC and Water For People identify three risk areas for water resource, climate change and WASH^{xvi}:

1. **Too little water:** increased water scarcity from increased temperatures and changing rainfall patterns.
2. **Too much water:** increased flooding, extreme weather events, and rising sea levels that cause infrastructure damage.
3. **Polluted water:** increased pollution from flooding and flashier rain events.

Safe and reliable WASH services rapidly improve the resilience of communities and households. Strengthening the systems that deliver WASH services helps combat climate change and other key threats, such as population growth and urbanisation. Access to high-quality WASH services is a human right, and strong WASH systems address the urgent needs of vulnerable and excluded populations^{xvii}.

SDG 6 targets are intrinsically connected (Figure 1) and **climate resilient WASH can only be achieved when it is considered in relation to other sectors and users, using Integrated Water Resource Management (IWRM)**, reported under SDG 6.5.



Figure 1 The linkages between IWRM and WASH within the SDG targets.

Inadequate water resources management (6.5), in particular over-abstraction and pollution by industries and agriculture threaten the quality of the water source needed for drinking water (6.1) and ecosystems (6.6). Similarly, problematic sanitation and hygiene practices threaten water quality and wastewater (6.3) and water management (6.5) as it worsens the water quality (6.3) downstream (adapted from UN Water).

Ethiopian trends in Climate Resilient WASH

The updated National Determinant Contribution (NDC) of July 2021 sets ambitious targets, which includes three adaptation commitments on water (see Table 1), including integrated watershed development and increase of potable water per capita to 25 litre per person per day. These commitments are in line with the specific objectives of the National Adaptation Plans (NAP) of 2019 and the draft National Water Policy and Strategy 2020. The latter states as guiding principle:

“The State takes steps to progressively realise every citizen’s access to sufficient, continuously available, affordable and safe drinking water and sanitation, with the aim to achieve universal and equitable access and leave no one behind.”

With the supporting statement:

“In allocation of scarce water resources, ensure first that water for basic necessities at the household level is fulfilled followed by the achieving of food security, and minimum eco-system needs. All other allocations of water shall be based on equitable and efficient socio-economic development criteria.”

This is further reflected in the One WASH National Programme (OWNP) which puts climate resilience at its core^{xviii}. OWNP is based on both securing water sources and on improving infrastructure sustainability by improving management structures and supply chain.

The three sub-components of the OWNP Climate Resilient WASH include:

1. Water resources mapping, planning and monitoring: This includes activities that contribute to mainstream the concept of climate resilience across the programme and provides critical investments to make the programme implementation possible;
2. Climate resilient solutions: This includes activities that contribute to pilot climate resilient solutions and to intensify investments in drought prone areas;
3. Emergency preparedness, early response and recovery: This includes activities that contribute to reduce the impact of emergencies through preparedness.

Amongst others it highlights that access to WASH is the best way of increasing climate resilience as it shifts people from vulnerable surface water sources to more resilient sources such as deep groundwater.

Most water supply systems (both rural and urban) depend on groundwater. In the most densely populated highland areas, these include mainly springs and shallow wells. Shallow groundwater is vulnerable to climate change with drying up of shallow wells and a drop in groundwater level being common. In lowland areas, boreholes may be hundreds of metres deep to tap deep groundwater. These deep groundwater sources are relatively well-buffered from climate fluctuations and abstraction for other water uses is likely to present a greater threat than reduction in groundwater recharge.

Surface and groundwater are increasingly at risk of pollution linked to agricultural and industrial development.

There is an increasing flood risk to water installations within and near watercourses, due to more extreme weather events and a large increase in water supply facilities. Especially in lowland areas, boreholes are often constructed along or near rivers that are prone to occasional flooding

The joint Government-Donor Water Sector Working Group was created in 2015 with the objective to support integrated development and management of water resources. It brought together the Technical Committees on WASH and WRM, with respective Working Groups^{xix}. The WRM sub-group has been able to bring together the three Ministries concerned: Ministry of Water, Irrigation and

Electricity; Ministry of Agriculture and Livestock Resources; and Ministry of Environment Forest and Climate Change and key development partners, academia and civil society organisations .^{xx}

Table 1 Water adaptation measures under revised NDC

Adaptation intervention (Commitment)	Indicator(s)	Baseline (2018)	2030 Target
Integrated watershed development in million Hectares	Area under integrated watershed development	2.24 million Hectares	10 million Hectares
Improve access to potable water to strengthen community climate resilience	Potable water supply per capita	19.36 litres/capita /day	Rural – 25 litres/capita/ day by 2025/within 1km Urban – 50-100 litres/ capita/day by 2025
	Proportion in decreasing non-functionality rate of water schemes	19%	7%
	Percentage of decreasing water waste	39%	20%
	Water supply for humans and animals in 100 isolated and drought-affected woredas	Indeterminate	100 woredas
	Number of residents using fluoride contaminated water	3.5 million people	0*
Expand the construction of medium and large-scale irrigation systems to enhance food security	Number of Hectares under medium- and large-scale irrigation schemes	0.49 million Hectares	1.2 million Hectares
	Percentage of improved irrigation technologies for medium- and large-scale irrigation	2%	20%
	Percentage of water use efficiency in medium- and large-scale irrigations	30%	50%
	Number of gender-balanced Irrigation Water User Associations	none	35.5
	Number of jobs created through expansion of irrigation network	-	930,000*
	Number of persons acquired skills through tailored capacity building activities	To be established	To be established
	Proportion of women shared development and management role in irrigation systems	To be established	To be established

The case of Negelle Arsi and Shashamane Woredas in West Arsi Zone

The WASH SDG programme has been working in the Negelle Arsi and Shashamane woredas. Under this programme, a study by Wetlands International in 2020 indicates that challenges of climate change coupled with the non-climatic factors like an ever-increasing population are exacerbating the problem of overexploitation of the limited natural resources. As per the projection for the coming 45 years, the available water is far less than the projected demand. This is resulting in environmental degradation. Environmental degradation can only be remedied by restoring some of the functions of the ecosystem, helping the partially restored system improve itself naturally, removing stressors, restoring habitats that have been lost and improving the robustness of the ecosystem to absorb human overexploitation.

Improving WASH is crucial in reducing inequalities – it is the poorest, the young and the elderly, excluded groups and women and girls who suffer the most from poor WASH services. Better WASH means higher levels of school achievement and greater productivity.

The WASH SDG programme in Ethiopia is working on achieving sustainable and equitable use of WASH (water, sanitation, and hygiene) by all following the three strategic objectives below:

1. Improving behaviour change interventions leading to increased demand for improved WASH facilities and practices.
2. Improving WASH service provision leading to increased availability and affordability of WASH products and services, which contributes to sustainable and equitable access to WASH.
3. Strengthening the WASH governance and institutional framework leading to enable governments to efficiently and effectively deliver inclusive and sustainable WASH services, which contribute to sustainable and equitable WASH.

The Wetlands International 2020 study shows that water scarcity is associated with the increased experience of overexploitation, pollution, siltation, and uncontrolled population growth which in turn are key factors to worsen water scarcity, affecting the WASH service delivery to a noticeable level. For example, high water abstraction from Lake Ziway and rivers like Bulbula contributed to severe water scarcity. Also, a lack of environmental and social impact studies and management plans for big investment projects may lead to water bodies being polluted by waste disposal and agrochemicals. As per the draft National Water Policy and Strategy 2020, the “polluter pays” principle should be applied, using the legal framework and strong enforcement of legislative measures.

It was noted, floods and drought have a triggering effect on poor WASH service delivery. For example, floods frequently trigger major destruction to basic facilities such as water supplies, sanitation, waste disposal systems, and other essential services. Without waste disposal systems floods wash away the waste which then ends up in water bodies. On the other hand, drought instigates water scarcity, so people are more inclined to use insecure water sources such as polluted rivers, streams, and lakes. Moreover, the findings indicate that deforestation and land degradation are the most pressing problems in the study area. Hence, environmental protection needs to be enhanced and promoted. Social capital and welfare of farmers are highly interlinked with agriculture, and land for this purpose must be managed appropriately in a sustainable manner.

The draft National Water Policy and Strategy 2020 indicates that water allocation plans should be developed at the level of the lowest possible water management unit, recognising that the basic minimum requirement (basic human and livestock needs) has the highest priority. This has been applied in the local catchment protection that followed. Adaptations such as erosion prevention (bund construction) increased the vegetation and reduced erosion. The increased vegetation has the added benefit of enhancing infiltration and recharging the aquifers. This increases the water availability in the area, making groundwater a more secure water source for WASH and other activities. It is a good example of how **local led adaptation can be a strong driver for achieving the SDG 6 target holistically**^{xxi}.

ⁱⁱ International panel on climate change (IPCC), *Climate Change 2022: Impacts, Adaptation, and Vulnerability Summary for Policymakers*, Cambridge University Press, 2022 downloaded from www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf

ⁱⁱⁱ Hailegiorgis B, Kebede A, Lemecha G., Mekonta L, *Gender Equality and Social Inclusion overview for the WASH sector in Ethiopia*, IRC, 2021 Downloaded from http://www.ircwash.org/sites/default/files/gesi_overview_for_the_wash_sector_in_ethiopia_2021.pdf

^{iv} Federal Democratic Republic of Ethiopia, *National Adaptation Plan (NAP)*, 2021 downloaded from

<https://www4.unfccc.int/sites/NAPC/Documents/Parties/NAP-ETH%20FINAL%20VERSION%20%20Mar%202019.pdf>

^v Federal Democratic Republic of Ethiopia, *Updated Nationally Determined Contribution (NDC)*, July 2021 downloaded from

<https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Ethiopia%20First/Ethiopia's%20Updated%20NDC%20JULY%202021%20Submission.pdf>

^{vi} Wetlands international, *Effect of water scarcity, climate change and environmental degradation on wash services delivery Case of Arsi Negele and Shashemene Zuria Woredas in the West Arsi Zone and Adami Tulu Jido Kombolcha Woredas in the East Showa Zone of Oromia Region, Ethiopia*. SDG Programme, 2020

^{vii} In line with Growth and Transformational Plan (GTP) 2:

Ministry of Water Irrigation and Electricity, Second Growth and Transformation National Plan for the Water Supply and Sanitation SubSector (2015/16 – 2019/20), Federal Democratic Republic of Ethiopia, 2015 downloaded from

[https://www.cmpethiopia.org/content/download/2324/9850/file/GTP-2%20%20plan%20main%20\(english\)%20FI.pdf](https://www.cmpethiopia.org/content/download/2324/9850/file/GTP-2%20%20plan%20main%20(english)%20FI.pdf)

^{viii} www.youtube.com/watch?v=VVqK93fbkP8

^{ix} <https://washdata.org/report/jmp-2021-wash-households-LAUNCH-VERSION>

^x Ethiopia currently 23% and projected to be 39% by 2050 (<https://ourworldindata.org/urbanization>)

^{xi} Ethiopia annual population growth is estimated at 2.5% (<https://data.worldbank.org/indicator/SP.POP.GROW?locations=ET>)

^{xii} Per person consumption going up due to lifestyle changes, commodities, and access to better services.

^{xiii} <https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/short-changed-on-climate-change.pdf>

^{xiv} <https://www.unicef.org/media/109006/file/UNICEF-guidance-note-climate-shift.pdf>

^{xv} <https://openknowledge.worldbank.org/handle/10986/31805>

^{xvi} <https://www.wateraid.org/se/sites/g/files/jkxoof226/files/2021-07/Mission-critical-Invest-in-WASH-for-a-healthy-and-green-economic-recovery.pdf>

^{xvii} <https://www.ircwash.org/resources/climate-change-water-resources-and-wash-systems>

^{xviii} https://www.ircwash.org/sites/default/files/climate_change_water_resources_and_wash_working_paper_irc_and_water_for_people_1.pdf

^{xix} <https://www.unicef.org/ethiopia/media/1111/file/OWNP%20Phase%20II.pdf>

^{xx} Government of Ethiopia. 2019. FULL Proceedings of the Joint 10th WASH-WRM Multi-Stakeholder Forum.

<https://www.communityledtotalsanitation.org/sites/communityledtotalsanitation.org/files/MSF%2010%20Full%20Proceedings.pdf>

^{xxi} <https://www.unicef.org/ethiopia/stories/linking-one-wash-national-programme-and-water-resources>

^{xxii} Wetland International, *Catchment treatment for WASH: Ethiopia*, Video available on <https://www.youtube.com/watch?v=VVqK93fbkP8>

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