Malawi Snapshot on water and climate

1. Malawi Water Resources and WASH

Malawi has an extensive network of surface water bodies covering about 21% (approximately 24,400 km^2) of the country's total area. While the overarching climate is sub-tropical and influenced by the Inter-Tropical Convergence Zone (ITCZ) and El Niño Southern Oscillation (ENSO)[1], the Malawian terrain creates different micro-climates largely due to rainfall variation across locations, Malawi has an estimated annual renewable freshwater resource of 3,000 m^3 per capita[2]. The country has two climate patterns, one for the North with the highest rainfall around the lakeshore and another for the Central and Southern regions characterized by higher temperatures[3].

Weather-related shocks are becoming more frequent and devastating in the country, the most prominent being the major floods of 2015 and Cyclone Idai in 2019. Malawi is experiencing high surface run-off due to intensified rainfall. Less water percolates to recharge groundwater or is retained in surface water bodies. Most parts of the country have already started experiencing a decrease in the water table. Coupled with frequent droughts, some perennial rivers are now becoming seasonal. The Southern area, in particular, has clear hotspots for weather-related shocks due to the decline in annual rainfall and evapotranspiration[4].

Malawi mainly depends on groundwater, especially in rural areas where about 80% of Malawi's population lives. Source protection challenges, soil erosion and deteriorating water quality poses a significant risk to water resources, amplified by increased seasonal variability, lower water tables that aggravate water insecurity[5].

Water-related climate shock impacts heavily impact the WASH sector in Malawi. For instance, it is estimated that Cyclone Idai destroyed WASH infrastructure worth US$3.8 million[6].

The World Resources Institute (WRI) Malawi Water Risk Index is medium to high. The physical risk factors associated with riverine floods are extremely high, reflected in the frequent floods that displace millions of people and destroy key infrastructure, particularly roads, bridges, schools, homes, electricity networks, and agricultural land. Unimproved water, lack of sanitation, and regulatory and reputational risk are extremely high. Drought risk is medium, and groundwater has low variability. Water quality risks are extremely high due to untreated wastewater and little sanitation coverage. Regulatory and reputational risks are extremely high, a hindrance to private sector investment that can enhance access to water services and increase the economical use of water resources.

2. SDG6: JMP and Global Environmental Management System

Malawi has made impressive progress in increasing water supply coverage over the last five decades. The WHO/UNICEF Joint Monitoring Programme (JMP) for 2017 estimated the coverage for basic water supplies to be 67% nationally: 63% in rural and 87% in urban areas. While the availability of water resources in the aggregate is considered satisfactory, per capita water availability has declined rapidly due to population growth. Additionally, low functionality of water is prevalent, with an estimated 30% of water points non-functional at any given time. Providing safe and reliable drinking water beyond the current 80% service coverage requires an increase in water production from 100 million to reach 150 million litres of water per day. Losses due to Non-Revenue Water (NRW) – piped water that is lost, either from leakage or from theft/metering inaccuracy –are of particular concern as currently, about 40% of treated water is lost annually, translating to a loss of 16 million m3 per year due to illegal connections, poor customer data management, and ageing pipe infrastructure .Key national-level water and WASH indicators are summarised in Figure 1 below[7].

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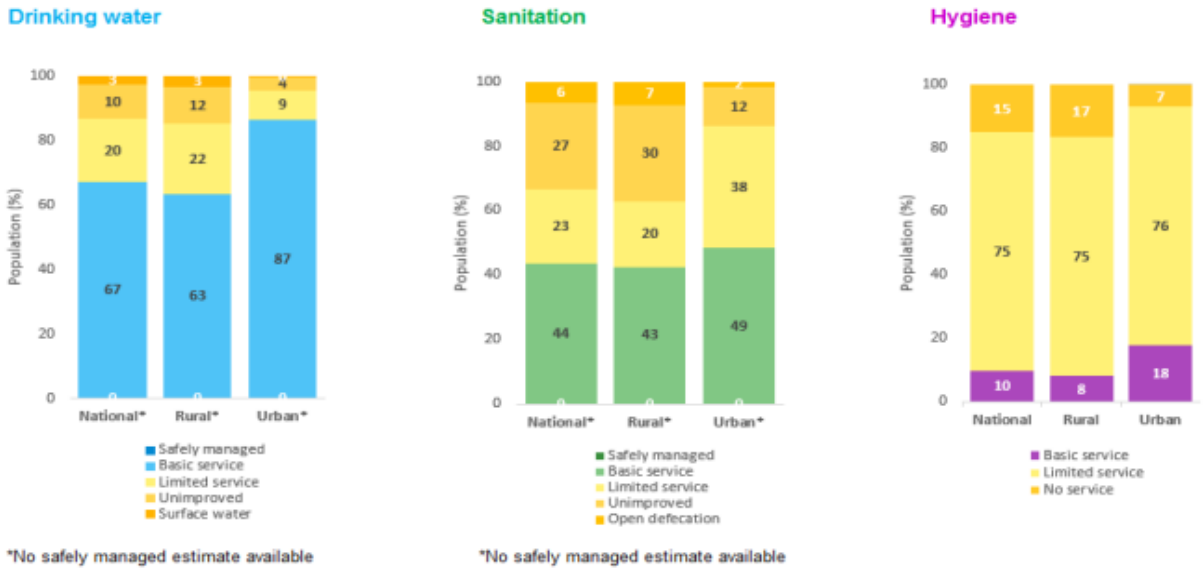
[1] http://www.un-gsp.org/sites/default/files/documents/malawi.oxford.report.pdf
[2] https://www.ecovillagefindhorn.com/docs/Grenner_Gambatula.pdf
[3] Malawi Project/Programme Proposal to the Adaptation Fund
[4] https://www.ircwash.org/sites/default/files/climate_change_wrm_and_wash_in_malawi_-_country_case_-_aug_2021.pdf
[5] https://www.ircwash.org/sites/default/files/climate_change_wrm_and_wash_in_malawi_-_country_case_-_aug_2021.pdf
[6] The World Bank Group, PDA Report, 2019.
[7] UNICEF (2019). Malawi Water, Sanitation and Hygiene (WASH) Thematic Report

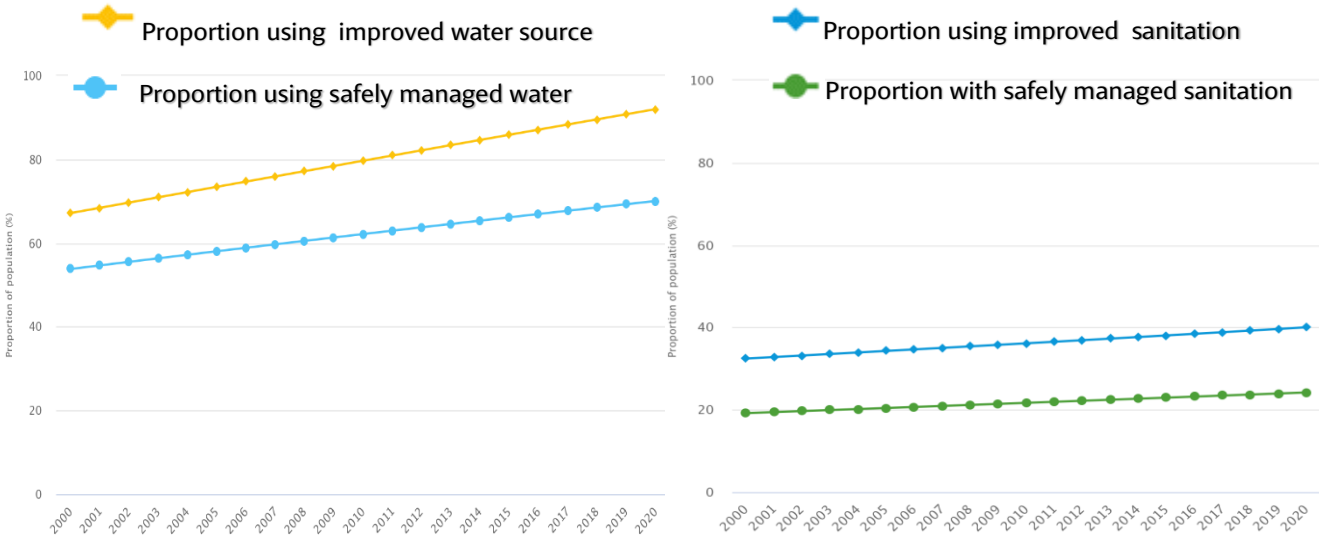
Figure 1: National Level WASH Indicators



Source: JMP 2017

The [JMP report covering 2000-2020] reveal that the population using an improved drinking water source has increased from 86% to 92% between 2015 and 2020. In comparison, safely managed and improved sanitation have lagged far behind, with access to improved sanitation, increasing from 38% to 40% during the same period.

Figure 2: Proportion of Population Using an Improved Drinking Water Source and Improved Sanitation



SDG 6 targets related to the **Global Environmental Management System** (GEMS) estimates that 18% of the renewable water resource in Malawi is being withdrawn after taking into account environmental flow requirements[8]. Water demand across the country is dominated by agriculture (71 %) and domestic water requirements (19%)[9]. The enabling environment for the IWRM Agenda of the national strategy on Water Resources implementation (on a scale of 0-100) was estimated as 'High' at 76% in 2020, up from 40% in 2015. On average, factoring in the various components, including financing, and implementation of the IWRM, is below 60%, with an increase of 15% since 2015 (see chart below)[10].

[8] https://www.sdg6data.org/country-or-area/malawi
[9] Green Climate Fund (2021) Climate resilient health and well-being for rural communities in Southern Malawi
[10] https://www.sdg6data.org/country-or-area/malawi

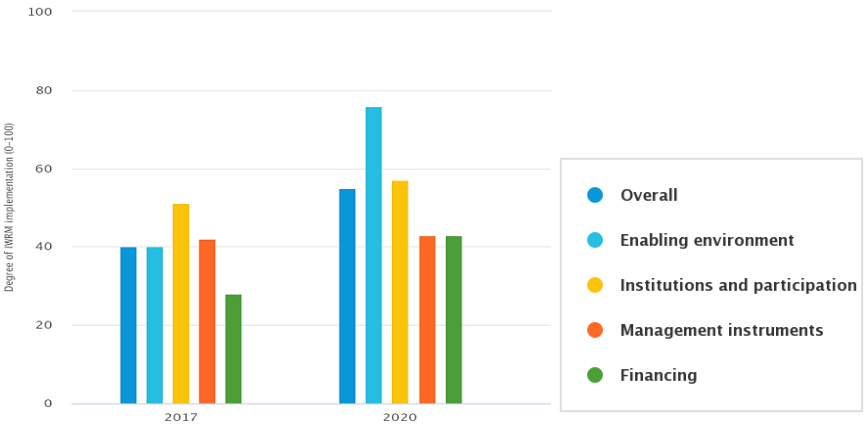


Figure 3: Degree of IWRM implementation in Malawi

The country's policy and legislative framework on water management are well advanced, though public participation in decision-making at the policy and programme level was moderate as of 2019.

3. Climate Change and Disaster Risk Reduction

Malawi has experienced an increase in the frequency, intensity, and variability of weather-related shocks in recent years, including floods, droughts, and dry spells, as well as an increase in temperature. According to the Department of Disaster Management Affairs (DoDMA), between March 7 and 9, 2019, Malawi experienced devastating floods associated with Tropical Cyclone Idai. Approximately 870,000 people from 15 of the country's 28 districts were affected, including 60 dead and 3 missing, 672 injured, and over 87,000 displaced.

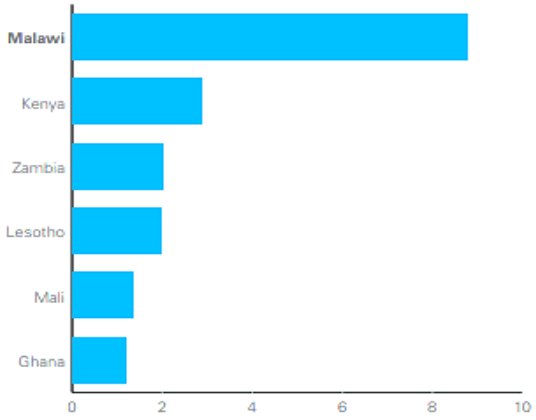
Under its updated National Determined Contribution (NDC) submitted in July 2021, Malawi adopted absolute economy-wide targets for cutting greenhouse gas emissions by 2040. The updated NDC represents a more detailed and robust assessment of mitigation and adaptation measures in Malawi, including emissions reductions and estimated funding requirements, informed by in-depth analysis, improved information and data, and an extensive national stakeholder-driven consultation process[11].

The impacts of climate change are felt particularly in the rain-fed agriculture sector[12]. Deep-rooted poverty, rapid population growth estimated at 2.7%[13] annually, resulting in overexploitation of natural resources, and high dependence on subsistence rain-fed agriculture[14] are all increasing the vulnerability of populations to climate change impacts.

4. Financing

Public financing for recurrent water expenditure and development resources from Government is low, affecting the implementation of Malawi's WASH agenda. The overall district council budget allocation was MK39, 200,580,635 (USD 38,450,789.95) in 2018, with the WASH sub-sector being the least funded at 1% of the council funding[15]. The Malawi National WASH Building Blocks Assessment established that Malawi's sector strategic plans are not effectively linked to the Ministry of Finance budgets. UNICEF SDG costing analysis tool 2019/2020 indicate Malawi will require USD 97million (MK 68,840m) to build and maintain BASIC universal coverage and an additional USD 258m (MK 183,228m) to build and maintain safely managed services each year, up to 2030, to achieve SDG6. 1 and SDG 6.2 by 2030. The WASH budget for 2020/2021 allocation was USD 88.2 million (90 billion MK) and mostly allocated to Urban water supply[16]. The GoM budget allocations to WASH as a proportion of GDP are also low compared to other countries in the region. Available data show that the Malawi Government's allocation of resources to WASH is 0.081% of GDP, which is only 55%, 52%, 43%, and 27% of that allocated by Kenya, Zambia,

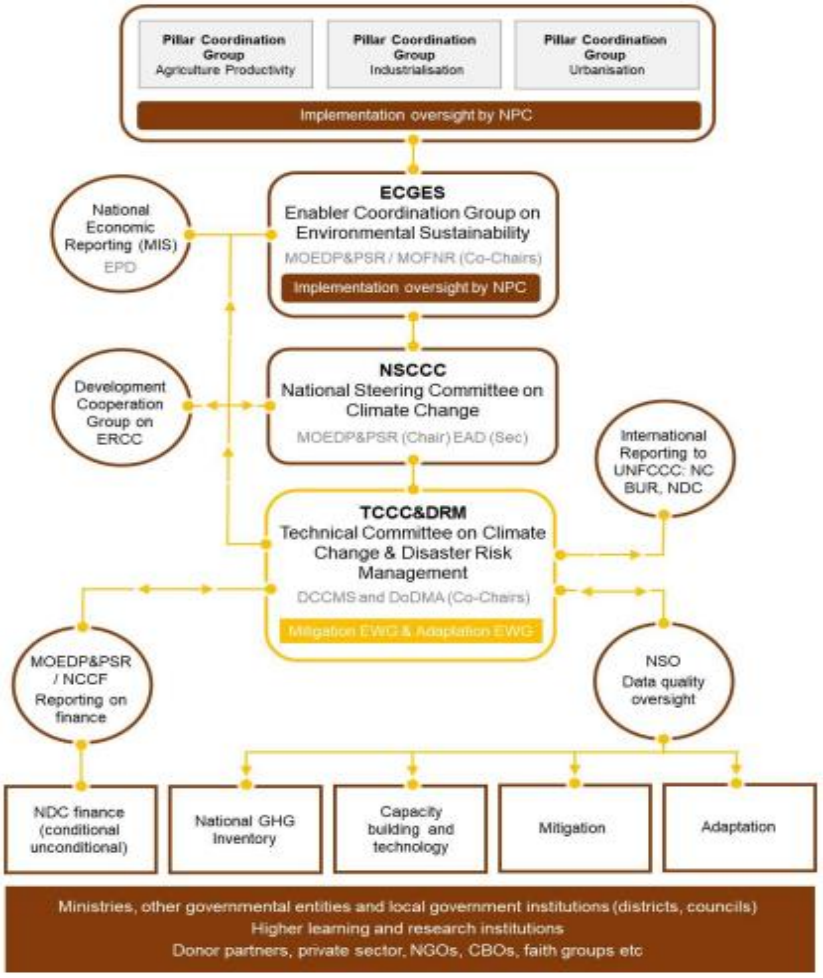
[11] Government of Malawi (2021). Nationally Determined Contributions
[12] Malawi Project/Programme Proposal to the Adaptation Fund
[13] https://data.worldbank.org/indicator/SP.POP.GROW?locations=MW
[14] Government of Malawi (2021). Malawi's National Adaptation Plan Framework
[15] UNICEF (2019). Malawi Water, Sanitation and Hygiene (WASH) Thematic Report
[16] https://thewashroom.waterforpeople.org/wp-content/uploads/sites/2/2021/03/National-Water-Sector-Systems-Assessment-Report-Dec-2020.pdf



international financing WASH, IWRM and climate adaptation including the World Bank Strategic Program for Climate Resilience (SPCR) , Global Environment Facility, and the Adaptation Fund. Malawi has obtained funds from GCF for 2 projects incldiung $16 million on the *Scaling Up the Use of Modernized Climate Information and Early Warning Systems in Malawi*[18].

Source: UNICEF (2020) Public Expenditure Review of the Water, Sanitation, and Hygiene Sector of Malawi
Figure 4: Ratio of external to government financing for the WASH sector in six Sub-Saharan Africa (SSA) countries

Ghana and Mali, respectively. The per capita allocation is less than one-fifth of those countries (see figure below)[17]. Malawi mostly depends on



Implementing the Malawi updated NDC measures will require US$ 41.8 billion through 2040. Challenges for climate finance in Malawi include inadequate domestic budget and limited involvement of private sector. The Government of Malawi is currently preparing a resource mobilization strategy to support the prioritized measures identified by the updated NDC. As part of its $350 million support to Malawi, primarily for hydropower, the US Millennium Challenge Corporation invested over $20 million to reduce the impact of soil erosion and invasive aquatic seaweeds and improve the catchment along Shire river.

5. Governance

For WASH service delivery tasks District councils are responsible for rural areas while water boards focus on urban areas. Water users' associations (WUAs) are responsible for the operation and maintenance of community water systems At the national level, there are three key ministries: the newly launched Ministry of Water and Sanitation has overall responsibility for water service provision and water resource management; the Ministry of Health and Population (MoHP) leads on sanitation and hygiene promotion, including the management of frontline staff; and the Ministry of Local Government (MoLG) is responsible for local authorities.

Climate change planning involves cross- sectoral and district-level administrative structures coordinated by the National Planning Commission (NPC) through Sector Working Groups (SWGs). The SWGs track the short-term implementation of sector priorities aligned with the goals of the Malawi Growth Development Strategy (MGDS) III and the National Vision (Malawi 2063).

In its updated NDC, the proposition is made that the Pillar Coordination Groups (PCGs) shall be the top-most level and will be responsible for

Figure 5: Institutional arrangements for tracking Malawi's NDC implementation

[17] UNICEF. Malawi WASH Public Expenditure Review 2020
[18] Government of Malawi (2021). Nationally Determined Contributions

spearheading implementation and reporting progress on the three pillars of the National Vision with the support of the Enabler Coordination Group on Environmental Sustainability (ECGES). The ECGES will be co-chaired by MEPD&PSR and MOFNR, with the Environmental Affairs Department (EAD) as the secretariat. The Enabler group shall constitute both state and non-state actors. The PCGs and ECGES will work closely with the National Steering Committee on Climate Change (NSCCC) and the joint Technical Committee on Climate Change and Disaster Risk Management (TCCC&DRM) in defining multi-year pillar and enabler priorities as well as advising Government on the resources required for meeting the defined Vision priorities within their respective pillars and/or enablers.

The Malawi National WASH Building Blocks Assessment concludes that the National Water Policy of 2005 and National Sanitation Policy of 2008 are outdated but under review. expressing concern on vacancy rates of 67% in the Water Departments and at the district level and failure to share WASH Strategies

6. Gender Mainstreaming

Malawi's National Climate Change Policy seeks to reduce people's vulnerability and promote community and ecosystem resilience to the impacts of climate change and gender-equitable adaptive capacity for planning and implementation. The gender mainstreaming component is also emphasised in other policy frameworks, including the SDGs, NAPs, and NDCs [19].

The Malawi Programme Proposal to the Adaptation Fund reveals that a key constraint to climate adaptation is the unequal access between men, women, and youth to climate information. Women tend to prefer face-to-face interactions with extension workers and lead farmers due to their lower levels of literacy and limited access to income opportunities, technology, and assets. Conversely, men and youth use radios, cell phones, the internet, television, and newspapers to receive climate information.

Malawi relies heavily on rain-fed agriculture, with women undertaking 50-70% of all agricultural tasks, producing 70% of the food consumed locally, yet they rarely have access to the benefits of production [20].

To address the gender gaps in WASH and climate change, the Updated Malawi NDC comes with an improved Monitoring and Evaluation (M&E) framework with an elaborated structure for reporting progress nationally and internationally. It includes disaggregated indicators capable of tracking the extent of gender and vulnerability integration across sectors[21] informed by various policy and programme interventions by development partners in Malawi. For instance, the Government and WFP-commissioned Gender, Social and Environmental Assessment for the Adaptation Fund project (2019) identified an urgent need to prevent violence against women and girls, ensure equitable access to social services and productive inputs, and promote the equality of women in labour markets and decision-making processes to ensure full contribution to climate-related planning, policy-making and implementation[22].

[19] Environmental Affairs Department of Malawi (2022). Malawi GCF Readiness Report
[20] Malawi Project/Programme Proposal to the Adaptation Fund
[21] Government of Malawi (2021). Nationally Determined Contributions
[22] Malawi Project/Programme Proposal to the Adaptation Fund