



WATER TRACKER
• FOR NATIONAL CLIMATE PLANNING •

COUNTRY REPORT

Application of the Water Tracker
for National Climate Planning



MALAWI



Ministry of Infrastructure
and Water Management



UKaid
from the British people

I. Country Context

Malawi is a land-locked country in southern Africa that lies along the southern most arm of the great East African Rift-Valley System. Malawi has experienced a range of climate-related effects in the last few decades, including increased frequency and intensities of flooding and drought. Most notable shocks are erratic rainfall, droughts, prolonged dry spells and strong winds. The changing climate has affected various sectors of the economy including agriculture, health, water, energy, transport, education, gender, forestry, wildlife and infrastructure¹. The World Bank projects² the following temperature and rainfall changes for Malawi:

- Mean annual temperature is projected to increase by 1.1 to 3.0°C by the 2060's, and by 1.5 to 5.0°C by the 2090's. Annually, projections indicate that 'hot' days will occur more often.
- Nights that are considered 'hot' for the annual climate during the baseline period 1970-99 are projected to increase more quickly than hot days.
- Substantial changes in annual rainfall are not projected between June to October and monthly rainfall changes for November to May are inconsistent, with some models projecting increases and others projecting decreases, particularly in the period from September to May.
- All models consistently project increases in the proportion of rainfall that falls in heavy events in the annual average of up to 19 percent by the 2090's.

Changes in precipitation and temperature may jeopardize Malawi's food security and the lives of many Malawians. According to the Germanwatch Global Climate Risk Index, Malawi was one of the top three nations most impacted by climate change in 2015³. Poverty, rapid population growth, and associated overexploitation of natural resources, combined with a heavy reliance on subsistence rain-fed agriculture are all factors that make Malawi more vulnerable to the effects of climate change.

Adaptation and Mitigation Goals

Malawi's Nationally Determined Contribution (NDC) revised in 2021, presents a series of ambitious adaptation and mitigation goals for the country.

Mitigation Goals

Malawi's GHG emissions are currently among the lowest worldwide, both on an absolute and a per capita basis. However, under a business-as-usual (BAU) scenario, emissions are forecast to increase by more than three times by 2040, rising from around 9 million tCO₂e in 2017 to over 34 million tCO₂e. Energy use is expected to be the largest driver as population and economic growth increase demand for transport, power generation and products. Rising emissions from waste generation, livestock and crop management are also likely to be significant.

Analyses of Malawi's mitigation potential shows that projected emissions could be reduced by around 50 per cent (50%) by 2040 if all identified measures were funded, including through international support.

¹ Malawi Third National Communication to UNFCCC (2021),

<https://unfccc.int/sites/default/files/resource/TNC%20report%20submitted%20to%20UNFCCC.pdf>

² World Bank Group Climate Knowledge Portal (2021)

<https://climateknowledgeportal.worldbank.org/country/malawi/climate-data-projections>

³ NAP Global Network (2017),

<https://napglobalnetwork.org/2017/02/malawi-hosts-international-forum-adapting-climate-change/>

This falls to 6 per cent (6%) for domestically funded measures only. Mitigation measures identified within the energy sector account for the largest share of total potential at 85%, followed by agriculture (9% of the total), waste (5% of the total), and industrial processes and product use (IPPU) (1% of the total).

Adaptation Goals

Malawi is particularly vulnerable to floods, droughts and strong winds associated with tropical cyclones. Over the past fifty years, Malawi has experienced more than 19 major flooding events and seven droughts with the worst flood experienced in 2015. The 2015 flood affected over 1 million people, displaced 230,000 and killed 106. A further 172 people were reported missing (GoM, 2020). Floods and drought episodes also result in damage to property (assets) and disruption of livelihoods.

Falling water levels in lakes and rivers associated with increasing frequency of drought episodes are threatening the survival of humans, fish, and other natural resources. Economically, lost production due to droughts and floods cost Malawians on average 1.7% of GDP annually, whereas the combined effects of floods of 2015 and the subsequent drought of 2016 cost the economy over 5% of annual GDP.

Climate trend analyses show that over the period from 2020 to 2040, El Nino conditions will likely increase climate extremes, resulting in increased severity and frequency of floods, droughts, and strong winds.

To survive in the face of these challenges, people have adopted income generating strategies that include tree felling to produce charcoal for sale, and encroachment onto riverbanks and into seasonally dry stream beds to produce winter crops. These activities lead to further degradation of the environment, deplete assets and escalate poverty. This calls for urgent implementation of robust climate change adaptation strategies to avert impending disasters associated with these hazards, break the cycle of environmental degradation, and sustain livelihoods.

II. Water Tracker for National Climate Planning

The *Water Tracker for National Climate Planning* supports national climate planning instruments which are aligned with the Paris Agreement. The Water Tracker was initiated under the water workstream of the Adaptation Action Coalition with support from the Government of the United Kingdom and the Dutch Ministry of Water Resources and Infrastructure. It is a practical and actionable tool for strengthening national climate plans and turning climate commitments into effective, bankable investments that meet national and global climate targets. The Water Tracker helps ensure that water resilience is integrated into national climate plans by illuminating water which is both explicitly and implicitly included in those plans and planning processes.

The primary objectives of the Water Tracker are to:

- Promote a shared vision and understanding of water resilience across sectors, institutions, policy frameworks, and levels of governance;
- Provide clarity in evaluating the ambition and efficacy of national climate planning and action;
- Support the value chain around water-sensitive investment: from line ministries to implementing agencies and finance institutions;
- Promote tools and frameworks designed to enable water-sensitive mitigation and adaptation and effectively climate-proof projects across sectors.

The Water Tracker is especially a resource for national climate planners and policymakers. It is also useful for line ministries, civil society, investment banks, aid agencies, and other groups with a stake in evaluating the credibility and efficacy of national climate instruments, such as the NDCs and National Adaptation Plans (NAPs).

The Guidance Document, which is under development as of April 2022, will provide key pathways for improving water resilience in national climate plans based on the outcomes of the Water Tracker questionnaire. This document will provide a clear methodology for applying the Water Tracker and support for building on successes and development recommendations which are informed by Water Tracker results. The Guidance Document incorporates international best practice in examples for each Water Tracker question, followed by relevant tools and resources from technical, governance, financial, and implementation perspectives to allow for countries and other stakeholders to easily identify applicable approaches for enhancing water resilience.

III. National Climate Plans

Malawi's government is implementing several key actions to assist in climate change adaptation and mitigation. To improve the resilience of its vulnerable population and ecosystems, it has designated adaptation as a top priority at the national level. As a result, Malawi's National Climate Change Management Policy, National Climate Change Investment Plan, and National Resilience Strategy have also been developed.

In addition to these climate change specific plans, policies and strategies, Malawi has a well-developed national climate change planning framework, centered around the Nationally Determined Contribution (NDC) updated in July 2021. Table 1 illustrates the broader National Climate Change Planning Framework for Malawi, which comprises a mix of explicitly climate change focused plans, sector plans and broader socio-economic development plans.

Table 1: Malawi National Climate Change Planning Framework

National Climate Change Planning Document	Year
Updated Nationally Determined Contribution (NDC)	2021
Draft National Water Policy	2021
Strategy on Climate Change Learning	2021
National Adaptation Plan Framework	2020
Malawi 2063	2020
National Resilience Strategy (2018-2030)	2018
National Disaster Recovery Framework	2017
Malawi Growth and Development Strategy III (2017-2022)	2017
National Climate Change Management Policy	2016
Nationally Appropriate Mitigation Actions	2015
National Disaster Risk Management Policy	2015
National Climate Change Investment Plan (2013-2018)	2014
Draft National Climate Change Policy	2013
National Environment and Climate Change Communication Strategy	2012
National Adaptation Programme of Action (updated 2015)	2006

IV. Applying the Water Tracker

The Water Tracker has been initially applied to a representative portion of the National Climate Change Planning Framework in Malawi. [Appendix 1](#) details the assessment of the initial 8 climate change planning documents using the Water Tracker tool. These documents are central climate change and water planning documents and provide a strong foundation for both the application of the Water Tracker to the broader national climate change planning framework, as well as the iterative improvement of the Water Tracker itself. A summary of the results from this initial implementation is presented in [Section IV](#) below.

Malawi Water Tracker Workshop

A national verification and validation workshop for the initial implementation of the Water Tracker tool was held in Lilongwe on the 17th of March 2022. The workshop was opened by the Minister of Natural Resources and Climate Change the Honourable Eisenhower Nduwa Mkaka. There were a number of senior representatives in attendance from both the Ministry of Natural Resources and Climate Change and the Ministry of Water and Sanitation.

The objectives of the workshop were threefold:

- increase awareness of the Water Tracker Tool among key officials / stakeholders in the water and climate sectors;
- present and discuss the initial results from the application of the Water Tracker in Malawi; and
- discuss opportunities for next steps and further action.

Key outcomes from the workshop included:

- General consensus that the Water Tracker tool is potentially useful and needed, it aligns well with existing programs. Integration of implementation for multiple water-related programmes is key.
- Initial results from the assessment conducted are familiar, with some key results being prioritised as key opportunities going forward.
- Interpretation of the Water Tracker assessment questions was similar to the interpretation and assessment of the planning documents conducted prior.
- Awareness of the tool upfront was low, however there is now a clear willingness for this to be institutionalised within both Ministries in attendance.

V. Water Tracker Findings

The initial implementation of the Water Tracker for National Climate Planning for Malawi presents some interesting findings, with some clear strengths as well as opportunities to improve integrated climate change planning.

Section 1: Water in National Climate Plans

Overall, the national climate planning documents assessed cover the majority of issues across the three sub-sections, with particularly strong results in the 'water as a risk' and 'water as a sector' sub-sections. The 'water as an opportunity' sub-section includes some key opportunities for improvement. The NDC and National Resilience Strategy alone address 15/17 questions in this section. Notably, the NDC is particularly strong on addressing water as a sector, while the Water Policy is relatively weak in addressing water as an opportunity.

Changes to the hydrological cycle and the understanding of water-related climate risks/impacts are generally well understood across the board. However, only the National Resilience Strategy includes some form of prioritization of water-related risks or opportunities according to chosen criteria. The Water Policy and National Resilience Strategy clearly identify root causes to be addressed for key water risks. Most documents are explicit in their inclusion of the water sector, making direct references to SDG 6 and hydrological impacts of climate change. Specific adaptation activities are more frequently identified in the water sector in comparison to mitigation activities, however the NDC and National Resilience Strategy identify both.

Water is identified clearly as an opportunity across most planning documents; however, both adaptation and mitigation commitments do not consider water use requirements in any of the documents assessed. Despite the NDC identifying mitigation opportunities from water and sanitation services, this is not well integrated across the climate change planning framework. Although the NDC includes water-related adaptation and mitigation actions and targets with other key actors as part of their implementation, there is no explicit connection between these sectoral activities and other sectors in the document. There is adequate flexibility in adaptation actions to respond to changes in climate projections and lessons learned from experiences on-the-ground.

Section 2: Water in National Planning and Governance

The climate planning documents assessment address all key questions related to Water in National Planning and Governance, in one way or another. The National Resilience Strategy addresses 24/24 questions while the Water Policy explicitly addresses 20 out of 24 issues in Section 2. This illustrates an advanced water governance and sustainable development approach. However, despite the implementation of strategic policy areas operating across multiple ministries and departments, there is no cross-ministry risk assessment process highlighted in this policy. Only the National Resilience Strategy includes any form of climate risk assessment.

All of the planning documents provide for adequately flexible mechanisms for revising existing laws, regulations, policies, and institutional structures in the face of new climate evidence, generally in the form of progressive Monitoring, Reporting and Verification Framework. On the other hand, adaptive management/planning approaches are only considered explicitly in relation to uncertainty around future water management challenges in the Water Policy and National Resilience Strategy.

All planning documents include explicit capacity building programs and facilitate bottom-up and top-down institutional engagement processes. On the other hand, there are limited mechanisms in place to support

adjustment of adaptation approaches reflecting real-time learning during implementation. This is only reflected in the general NAP process and partly in the National Resilience Strategy.

It is clear that national climate plans address structural inequities faced by women and other vulnerable populations. This is illustrated primarily through making explicit reference to the prioritization of these groups and dedication of resources to activities focused on them. Moreover, landscape and ecosystem restoration and improved management is explicitly considered as a strategy to safeguard and enhance water supplies and climate resilience. Ecosystem-based adaptation and biodiversity conservation are also embedded as a cross-cutting approaches, however there are limited targets for these types of actions.

Section 3: Water and Climate Connections in Specific Sectors

In comparison to the first two sections, the national climate planning framework address fewer issues across the different sectors. However, this is to be expected as these areas are likely to be addressed more robustly in sector specific planning documents.

Most planning documents identify climate or water institutions involved in the development of adaptation or mitigation measures, while the NDC and Water Policy include contingencies to handle impacts of extreme events and explicitly incorporate nature-based solutions. Conversely, none of these documents identify and track sector-specific water use or target-specific water requirements, consider changes to where and when water will be available for use, include goals to improve water-use efficiency, and they do not explicitly state that all key sectors are involved in water resources dialogues and planning. Nor do mitigation actions explicitly include water use requirements, and water-climate commitments are not tracked nor are stress tests performed on planned assets.

Water allocation systems and processes exist, however these fall outside of the national climate change planning framework assessed in this report. The following findings were evident for specific sectors:

- **Energy:** Water quality/quantity impacts are not considered in relation to energy development actions.
- **Industry:** PPPs are identified as a key mechanism for industry to be involved in national and sub-national water resources planning.
- **Agriculture:** There is clear consideration of how rainfall variability will impact rain-fed crops; specific climate-smart agriculture techniques/practices are identified as adaptation and/or mitigation activities.
- **Water Resources:** Wetland ecosystems are not readily and regularly identified as a means to enable water security, water resilience and reduce emissions – despite their national importance.
- **Solid Waste:** Water requirements in waste-to-biofuel conversion and landfill gas recovery systems are not considered.
- **Transport:** Transportation goals do not explicitly consider water use requirements or the impacts on water resources and land use.
- **Forestry and Land Use:** Reforestation objectives do not consider water requirements needed for establishment and/or maintenance of reforested areas; watershed-based land-use planning mechanisms are established or included as part of adaptation plans.
- **Human Settlements:** Climate risk assessments are not explicitly included in the review processes for new developments; water requirements are not explicitly considered for growth of human settlements.
- **Water Supply and Sanitation:** Representatives from the WASH sector actively participate in national climate planning processes; there are no explicit provisions for management of water

infrastructure during extreme events/exceptional circumstances; adaptation needs of water and sanitation infrastructure and services are clearly identified in relation to climate resilience.

- **Health:** There are clear provisions included for protecting vulnerable populations, including the elderly, children, differently abled etc.

Section 4: Links to Climate Financing and Project Implementation

The climate planning framework in Malawi addresses links to climate financing and project implementation moderately, with clear opportunities for improvement. The framework clearly links policy priorities, actions and targets, and includes options to align non-national institutions with national resilience strategies. There are some key examples of explicit promotion of the coupling of public budgets for multi-purpose projects through various co-investment mechanisms such as public-private partnerships (PPPs). Despite the NDC outlining the specific financing requirements for adaptation and mitigation actions, as well as the conditional and unconditional contributions, there is no specific mention of financing from various international and national institutions.

Despite the conditionality of many strategic mitigation actions on the support of the international community, there is no mention of the contingency of this finance on effective climate proofing. Only the Water Policy incorporates provisions for progressively tracking financial allocations and expenditures on adaptation/mitigation activities. The Water Policy includes a Strategy to establish the National Water Development Programme to pool resources into programmatic financing rather than project-based financing. Implicit in programmatic financing of water related activities is the tracking of financial allocations and expenditure on a variety of actions that include climate adaptation and mitigation actions. Lastly, the national finance sector (banks, insurers, asset managers, etc.) is not explicitly involved in the implementation of the adaptation and/or mitigation measures in the Malawian climate planning framework.

Summary and Recommendations

It should be noted that the Water Tracker is designed to assess an entire planning framework, and thus no single planning document is expected to address all the various aspects on its own. Thus, from the initial assessment it is evident that these eight climate planning documents are highly complementary in terms of addressing gaps and synergizing strengths across all four sections of the Water Tracker. The strengths and synergies are particularly evident in Section 1 and 2 of the Water Tracker. Although there are clear opportunities available across all four Sections to improve the integration of water aspects in national climate planning in Malawi.

Strengths

Malawi presents a good practice example of integrating different dimensions of **sustainable development** into climate change planning documents. This is particularly evident through the. Regular and explicit references to **vulnerable and marginalized populations**, as well as a clear inclusion of ecosystems as central stakeholders. **Data and information** collection systems are structured around these key considerations, despite their nascency and chronic underfunding, these systems show promise for development into the future.

Capacity building programs are central to key climate planning documents and illustrate a clear strategic direction for improving local and institutional capacity across multiple sectors. This focus is harmonized with clear **mechanisms for aligning different actors** in the climate change space to co-invest and contribute to climate change policy priorities, as well as clear inclusion of **flexibility mechanisms** to

respond to new climate risks, i.e. contingencies for impacts of extreme events and use of nature-based solutions.

The current Malawian Climate Change Planning Framework demonstrates robust **water governance frameworks and principles** that integrate climate change planning objectives into sector policies. Together with well-defined **water and climate connections** in the water and sanitation, agricultural, forestry and land use, and human health sectors. This lends itself to well coordinated **climate finance structures and protocols** that, together with capacity building, are at the centre of the climate planning framework.

Opportunities

The climate change planning framework clearly recognizes water as a sector and hydrological impacts of climate change, however **water is not readily identified as an opportunity**. This is most evident in there being no clear consideration of water requirements for adaptation and mitigation goals and actions. **Mainstreaming water as an opportunity** throughout climate change policy and planning documents could help shift the focus away from the negative impacts on water and water-related impacts on people and the environment. This could include a specific focus on the potential benefits from changing hydrological or rainfall patterns as a result of climate change, and how Malawi will look to take advantage of these changes. Moreover, climate change and water risks and opportunities could be explicitly **prioritized against set criteria** such as risk, exposure, sensitivity etc. to provide a clear evidence-base for decision making.

Water use requirements for different sectors, adaptation actions and mitigation measures should be explicit in order to clearly link climate change and water resources management. These requirements should be directly linked to existing water use measurement and monitoring systems (e.g. water use permitting and allocation). With a clear understanding of how existing water resources are being used, projections can be made in line with projected hydrological changes resulting from climate change. In addition, the **management protocols of water infrastructure during extreme events** can be made explicit with a good understanding of how current and future water use and availability patterns look like. International good practice indicates that clear structures should be in place to prioritise human consumption during times of drought and water infrastructure and energy requirements should be prioritized against key financial and risk criteria.

A key opportunity for enhancement is the inclusion and explicit endorsement of the importance of **wetland systems** in key climate change planning documents. Despite a brief inclusion of wetland/dambo preservation in the National Resilience Strategy, the importance of wetlands to sustainable development and climate adaptation and mitigation is not explicit in existing planning documents. Making clear reference to scientific data on the importance of wetland ecosystems for adaptation and mitigation will also link directly to the overarching **ecosystems-based approach** adopted by Malawi.

The planning framework would benefit from explicit linkages to **climate risk frameworks** to bolster the evidence-based decision making, as well as to incorporate real-time learning processes/systems for improved planning. These systems should be **flexible and robust** and directly linked to monitoring and evaluation frameworks to allow for improvements in understanding over time of projected changes in climate and climate impacts.

VI. Going Forward

The initial implementation of Water Tracker for National Climate Change Planning in Malawi has provided key insights into the strengths and weaknesses of the Malawian National Climate Change Planning Framework. Going forward, implementation of the following activities are recommended to ensure the findings can be successfully implemented and the process can be effectively institutionalised:

- **Institutionalisation of the Water Tracker for National Climate Planning:** continued high-level engagement on the importance of the Water Tracker to assist with the effective integration of water considerations in national climate planning processes and documents. Development of a dedicated forum or platform such as a Technical Working Group within the Climate Change Department under the Ministry of Natural Resources and Climate Change, to implement the findings of the Water Tracker and continue to utilise the Water Tracker over time. This could be a new structure or simply the allocation of roles and responsibilities to an existing Technical Working Group. It is recommended that this institutional structure is co-chaired by relevant technical members from the Ministry of Water and Sanitation and Ministry of Natural Resources and Climate Change. The Malawian National Planning Commission and any other relevant Ministries or Departments should be included where relevant and possible with the resources available.
- **Utilise the Water Tracker as a learning tool:** for building capacity on policy analysis with a specific focus on the integration of water into climate change planning. The Water Tracker tool and the accompanying guidance document should be the basis for a targeted capacity building activities for the implementation of the tool over time, to ensure the relevant members of the Technical Working Group are effectively capacitated to carry out their roles and responsibilities.
- **Iteratively develop the Water Tracker assessment framework over time:** to cover not only additional climate change planning documents such as the additional documents outlined in [Section III](#) – but also to include sector specific policies, strategies and planning documents. Together with the accompanying Guidance Document, the implementation of the Water Tracker can be a continued process to continually improve the findings over time and develop appropriate recommendations as Malawi's Climate Change Planning Framework is further developed.
- **Apply the Water Tracker as a policy and planning development tool:** to understand the progress of successive future planning/policy documents with respect to how they integrate water and climate change, the Water Tracker can be applied to successive versions of the same document to demonstrate how the planning document integrates water considerations over time. This can be done retrospectively as well to learn about how climate change planning documents have integrated water over time. For example, the 2013 Draft Climate Change Policy provided the basis for the 2016 National Climate Change Management Policy (NCCMP). The initial assessment detailed in [Appendix 1](#), shows that several key water-related considerations did not get transferred from the Draft Policy into the NCCMP when it was adopted. Ultimately, this process will assist to inform the development of future climate change planning documents in a manner than is consistent with the progressive improvement of the Water Tracker.