



# **Malawi National State of the Environment and Outlook**

**Summary for Policymakers**

**2026**



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Malawi Environment Protection Authority  
MEPA House  
Nkhalango Street  
Lilongwe 207213  
Malawi

Tel: +265 986 18 42 92  
Email: [dg@mepa.mw](mailto:dg@mepa.mw)  
Website: <https://www.mepa.mw>

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Cover photo by Malumbo Simwaka

# Malawi National State of the Environment and Outlook process

The Malawi National State of the Environment and Outlook Report builds on key findings from peer reviewed reports and defines the country's state and trends of the environment since 2010 when the last Malawi State of Environment and Outlook Report was published. This report that follows the Global Environment Outlook methodology explores future scenarios and suggests policy options that are available to bring the country onto a path of environmental sustainability while also solving the key challenges of extreme climate change events such as droughts, cyclones, and floods.

## Scope

**Chapters 1 and 2** review the main findings of the 2010 Malawi State of the Environment and Outlook report. They provide an assessment of human-environment interactions using the Drivers-Pressure-State-Impact-Response framework. The chapters also discuss national and multilateral environmental agreements and processes, including the Sustainable Development Goals, Malawi's Agenda 2063 and its 10-year Implementation Plans.

**Chapters 3 to 8** discuss the state of the environment and progress towards internationally agreed environmental goals and targets. The analysis is organized according to four natural systems (Air and Climate, Biodiversity, Land and Soils, and Freshwater) and the impact of extreme climate events on these systems.

**Chapter 9** discusses policy responses in detail outlining local and national policy measures, as well as regional policy measures (protocols) and global multilateral environmental agreements to which Malawi is a party. It also assesses the effectiveness of current policy responses.

**Chapters 10 and 11** discuss the outlook for Malawi using three scenarios, namely business as usual, policy first, and target-seeking scenarios. The discussion on the country's future is anchored around its ambitious development plan, [Malawi Agenda 2063](#). Policy options are suggested for the country to meet its goals and targets.

The Malawi National State of the Environment and Outlook Report considers the following policy questions:

- What are the current and projected drivers and pressures of environmental change, and how are they affecting the state of air and climate, land and soils, biodiversity, and freshwater?
- What are the implications of environmental changes on Malawi's capacity to achieve goals and targets under Sustainable Development Goals and Malawi Agenda 2063?
- What is the current state of effectiveness of the current policy responses?
- What are the likely future states of Malawi's environment?
- Which policy options are available to accelerate the country towards an environmentally sustainable development path?

The report was prepared by an interdisciplinary team of experts, including practitioners with expertise in energy, food and materials/waste systems, and their interlinkages with climate change. Experts were drawn from a diversity of backgrounds and disciplines, including those from the academic sector, business and industry, government, civil society, natural and social sciences, humanities, economics, finance, policy and regulations, laws, indigenous and local knowledge, and data analysis. A Scientific Advisory Group guided the process for scientific integrity while a Government Multi-Stakeholder Advisory Group provided guidance on the policy relevance of the report.

This Summary for Policymakers highlights the findings of the Malawi National State of the Environment and Outlook Report (NSEOR) and was prepared by the NSEOR's co-chairs: Dr. Lucy Mtilatila and Dr. Zacharia Magombo, with support from the Malawi Environment Protection Authority (MEPA), United Nations Environment Programme (UNEP) and GRID-Arendal.

Technical inputs into the summary were provided by authors of the NSEOR listed below:

Brighton Austin Chunga, Ivy Ligowe, Elias Peter Mwakilama, Tiwonge I Mzumara-Gawa, Bryson Nkhoma, Isaac Tchuwa.

It was negotiated and agreed on 30 January 2026 by:

Cecilia Aipira (UNEP), Chifundo S. Banda (CIRA), Hastings Banda (EAD), Tapiwa Banda (MEPA), Siphon Billiat (NPC), William Chadza (MWAPATA), Mussa Ching'amba (NWRA), Andrew Chione (MEPA), Sosten Chiotha (LEAD), John Chiromo (MEPA), Aubren Chirwa (MEPA), Wilbert Chisaukali (UNIMA), Jester Chitonde (CISANET), Bennie Chiwanga (MoGCDSW), Davies Chogawana (MEPA), Chifundo Dalireni (WESM), Ignacio Sanchez Diaz (UNEP), Mphatso Ganisye (MEPA), Yasinta Ganiza (EAD), Watipaso Harawa (LUANAR), Noordeen Hassan (MoAIWD), Experiencia Jalasi (LUANAR), Wilfred Kadewa (MEPA), Caroline Kampayi (MOICT), Nason Kanjirawaya (Min of Gender), Agatha Kasambeni (LUANAR), Andrew Kazera (Chisomo radio station), Elenimo Khonga (LUANAR), Francol Kisson (MOICT), Ishumael Kosamu (MUBAS), Elina Kululanga (SAG), Henderson Kulumbasi (DoGCS),

Tsork Kumcheza (MEPA), Titus Linzie (AEJ), Ivy Ligowe (MZUNI), Clever Mafuta (GRID-Arendal), Zacharia Magombo (NHGB), Wellington Mandowa (CIRA), Patricia Mayuni (DODMA), Martino Mazingo (MEPA), Everson Mkhaya (WESM), William Mgoola (Parks and Wildlife), Solomon Mlinda (NYCOM), Modester K. Millinya (MPGRC), Charles Mkoka (CURE), Patience Mtengula (MITC), Lucy Mtilatila (DCCMS), Godfrey Mvuma (Ubuntu Env Solutions), Elias Peter Mwakilama (UNIMA), Emmanuel Mwachunga (MMRA), Julius Ng'oma (CISONECC), Bryson Nkhoma (MZUNI), Lordwell Nkhwangwa (MEPA), Yanira Ntupanyama (GMAG), Leonard Nyanjagha (NSO), Maurice Nyemba (MITC), Aubrose Phiri (Water Dept), Emily Phiri (MEPA), Gift Phiri (MoAIWD), Karen Price (MEET), Sadhika Sasiprabhu (UNEP), Mary Shawa (LERENSE), Hannah Siamme (Greenbelt Authority), Isaac Tchuwa (MUST), Clement Tikiwa (EAD)





# 01 Introduction

The Malawi National State of Environment and Outlook Report (NSEOR), presents a comprehensive evaluation of the country's environmental status, taking into account its geographical, social, economic, cultural, and governance context. The report delves into the drivers and pressures of environmental change, providing an insightful analysis of the current state and trends in the

environment. Furthermore, it assesses the effectiveness of policy responses to these changes, aiming to outline possible pathways to achieve national and international sustainability goals. By addressing key policy questions, the report bridges the gap between the past, present, and future and highlights the outlook that proposes actions for a more environmentally sustainable society.





# 02 What is happening to Malawi's environment and our response measures

## 2.1 Drivers and pressures of environmental change

**Environmental change in Malawi; largely driven by human population growth, pervasive poverty, and accelerating climate crisis, is converging to exert immense pressure on the health of the country's environment especially land use and water availability** (*well established*). Driven by unsustainable consumption and production practices, these driving forces are deeply intertwined, dynamic, and complex; advancing at a pace that often overwhelms existing governance structures. Effectively tackling these environmental crises demands a proactive multisectoral approach. {2.1.1}

### Drivers of environmental change

**The country's population has increased from 14.8 million in 2010 to above 20.7 million in 2025 and is projected to double by 2050** (*well established*). The demographic surge with increased consumption and poor production practices is already pushing the country's environment to widespread land degradation, land use change, deforestation, and pollution. {2.2.1, 2.2.2, 2.2.3}

**Beyond the 5 per cent annual urban growth as recorded in 2024, with a projection that half of the population is to reside in urban areas by 2050, lies a stark reality: many still lack basic services** (*well established*). In most of the cities, 75 per cent of residents lack basic services such as good sanitation, housing and settlements, and their survival hinges on environmentally destructive livelihoods such as sand mining, brick making, and charcoal use. {2.1.1, 2.2.2}

**From 6.9 per cent in 2010 to 2.6 per cent in 2024, Malawi's declining Gross Domestic Product (GDP) growth rate is certainly one of the engines driving widespread environmental devastation** (*well established*). Increased poverty is forcing Malawians, particularly in the rural areas where 81.7 per cent of the population resides, to subsist on environmentally unfriendly practices. {2.1.2}

**Mining and tourism, cited under Malawi 2063 as pillars for sustainable development, have since 2010 been declining** (*well established*). The contribution of the mining sector to GDP has declined from 10.8 per cent in 2010 to 0.7 per

cent in 2023 because of the closure of Kayelekera Uranium Mine, while tourism has remained stagnant at 7.3 per cent as of 2017 due to local apathy, poor infrastructure, climate change, and weak sector regulation. While mining is essential for economic growth, there is a need to balance between economic gains and the damage it causes to the environment, such as soil erosion and pollution. {2.1.2}

**A decade of increasingly frequent and severe disasters, affecting developmental growth and amplifying human suffering, is a stark warning that climate change is already here** (*well established*). Increased climate variability, from devastating floods to crippling droughts and climate change events, have pushed millions deeper into hunger, loss of livelihood, and diseases. Rising temperatures also accelerate crop failures, spreading diseases, and deepening social inequities; driven by relentless natural disasters. From 1991 to 2020, average temperatures have increased between 1°C and 2°C in most areas and as high as 3°C along the shores of Lake Malawi. {2.1.5}

**Overdependency of 80 per cent of the country's population on rainfed agriculture is a double-edged sword** (*well established*). Agricultural expansion fueled a substantial increase in land use change, from 44.8 per cent to 62.29 per cent between 1998 and 2018, exacerbating pressure on environmental resources. The dependence on agriculture is relentlessly carving away at the health of the ecosystem, leaving behind a wake of environmental destruction evident through deforestation, soil erosion and fertility loss, poor ecosystem health, water depletion, loss of biodiversity, and water and air pollution. {2.1.2}

**Despite acknowledging technological innovation as one of the solutions to existing environmental challenges since the 1990s, Malawi faces slow uptake and disadoption of technologies** (*well established*). For example, although a renewable energy strategy was adopted in 2018 with clear priorities and actions for green energy adoption, as of 2023, 96 per cent of household cooking energy use still relied on biomass, with only 3 per cent from hydro and solar energy and 1 per cent from coal. {2.1.3}

**Malawi faces problems linked to inadequate waste management systems** (*well established*). For instance, there are insufficient waste bins, lack of recycling

machinery, inadequate waste transportation vehicles, dysfunctional sewer systems and lack of toilets. This leads to some residents and institutions dumping waste in rivers and stormwater drains. Without adequate systems, Malawi's waste problem has spiraled into a public health nightmare, aggravated by informal disposal methods that put communities' health at risk. With available policy recommendations, the 2026 NSEOR should serve as a wake-up call for urgent investment in modern, inclusive, and circular waste management systems. {2.1.3}

**The Malawi Government is committed to improving governance, environmental sustainability and inclusive growth** (*well established*). The Malawi Agenda 2063 and its first Malawi Implementation Plan, and the establishment of the Malawi Environment Protection Authority under the Environment Management Act (2017) are examples of what has been put in place to ensure environmental sustainability. The implementation of most policies and legal frameworks is hampered by limited institutional capacities and limited funding, ineffective fund management, poor coordination among government ministries, departments and agencies, and corruption among law enforcers, all of which undermine effective policy execution. {2.1.4}

**Cultural practices play a role in environmental change** (*well established*). While indigenous knowledge could be used to promote environmental conservation, there are some harmful practices that exacerbate environmental harm. {2.1.6}

### Pressures of environmental change

**Unsustainable land use practices, coupled with the exploitation of natural resources like forests, minerals, clay, and sand, directly lead to widespread soil and land degradation, deforestation, and significant biodiversity loss** (*well established*). Annually, Malawi loses 33,000 hectares of forests, while soil loss through deforestation in 2014 alone averaged 29 tonnes per hectare, with erosion and nutrient depletion affecting 60 per cent of the country's land area. Over-exploitation of resources critically disrupts vital natural processes, including biogeochemical, hydrological, and ecological cycles, and reduces resilience and capacity for climate change adaptation. {2.2.1, 2.23}

**Environmental degradation is impacting public health, contributing to the rise in prevalence of various non-communicable vector-borne and water-borne diseases** (*well established*). Malaria, diarrheal diseases, and malnutrition are among the main causes of death in Malawi, a situation which is exacerbated by climate change. {2.2.3}

**Air and water pollution has escalated over the past four decades** (*well established*). Although Malawi's total greenhouse gas (GHG) emissions (19.34 million tonnes of carbon dioxide in 2019) are the lowest in the Southern Africa Development Community, the reliance of 96 per cent

of the population on biomass fuels results in high levels of Household Air Pollution. Water resources are similarly contaminated by a confluence of factors including deforestation, soil and land degradation, unsustainable agricultural practices, surface water runoff and effluent discharge, human settlements, mining, industry, poor waste management, and commerce. {2.2.3}

**Plastic pollution is a growing concern** (*well established*). Malawi uses an estimated 75,000 tonnes of plastic annually, 80 per cent of which is single-use. Projections indicate that plastic waste in Lilongwe alone will nearly triple from 2014 levels, reaching close to 32,000 tonnes by 2030. This waste poses a direct threat to the environment, as rain causes plastics to leach harmful chemicals into the soil, subsequently contaminating groundwater, streams and rivers. While the ban on thin plastic was enacted in 2024, its effective enforcement has been hampered by institutional challenges. {2.2.3}

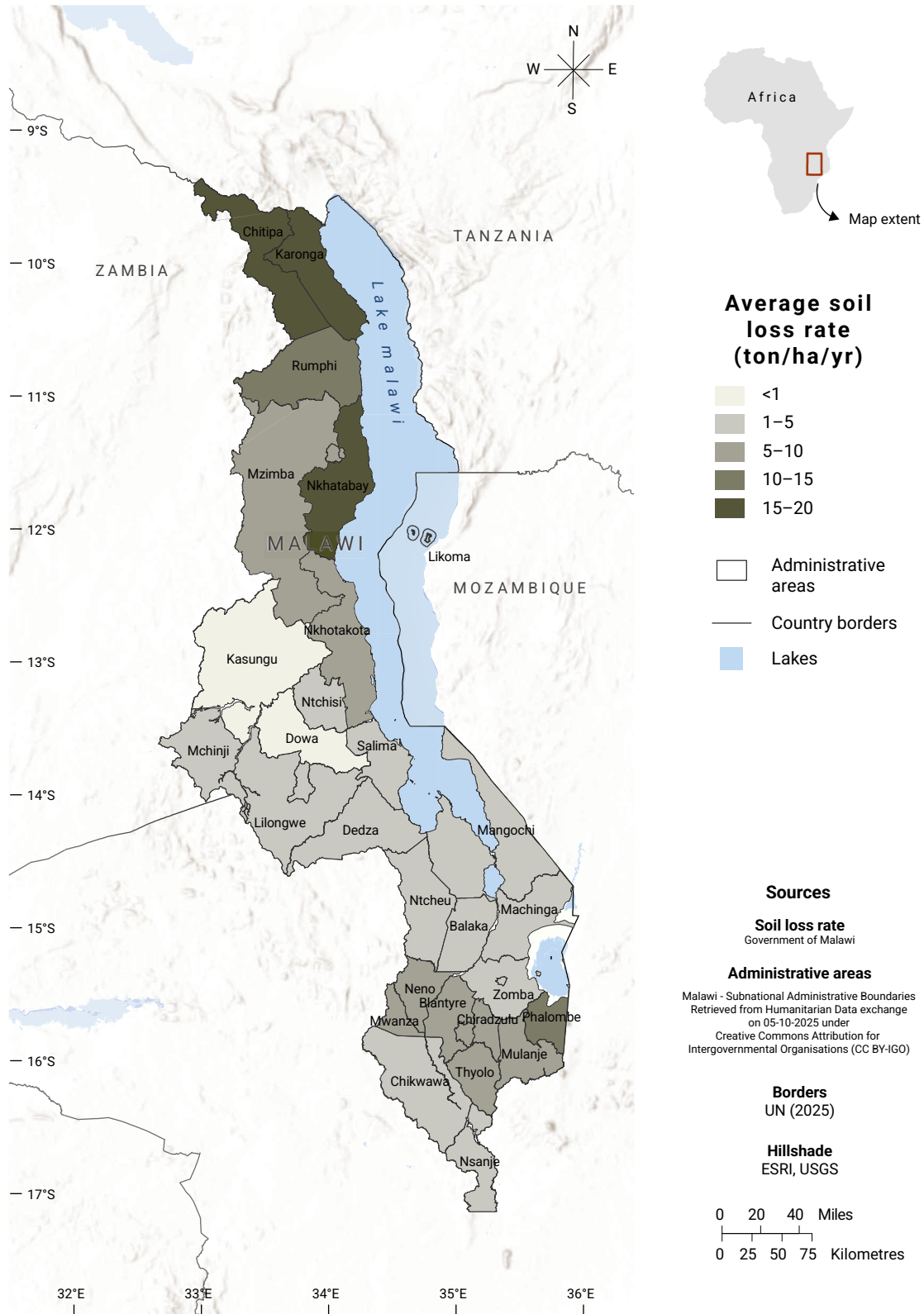
## 2.2 Land and soil resources

**Malawi is a landlocked and predominantly agricultural country whose development trajectory is closely tied to the health of its land and soil resources** (*well established*). However, rapid population growth, unsustainable farming practices, deforestation, and deteriorating quantity and quality of water resources have intensified land degradation to crisis levels. Over 80 per cent of Malawi's land is classified as degraded, with soil-loss rates among the highest in Africa, reaching almost 39.74 tonnes per hectare per year in some districts. The alarming trend threatens national food security, reduces agricultural productivity, undermines ecosystem services, and increases vulnerability to climate shocks and poverty, which results in annual GDP loss of about 7 per cent. Urgent, coordinated action is required, including targeted investment in sustainable land management, enforcement and review of land-use policies, and stronger community-based natural resource governance to halt further degradation and safeguard Malawi's long-term development. {3.1.3, 3.5}

**Malawi's soils are undergoing severe degradation, threatening national food and nutrition security and the livelihoods of millions of smallholder farmers** (*well established*). An estimated 85 per cent of the country's agricultural land, approximately 8 million out of Malawi's total 9.4 million hectares, is affected by soil erosion, nutrient depletion, and declining soil fertility. The estimated topsoil loss in the country ranges from 0.11 tonnes per hectare per year in Mangochi district to 39.74 tonnes per hectare per year in Karonga district, with a national average of 29 tonnes per hectare per year (Figure 2.2.1). The degradation is largely driven by unsustainable land-use practices, including continuous cultivation without adequate soil nutrient replenishment, widespread deforestation, and poor water and soil management, which contributes to economic losses of between 0.26 per cent and 0.64 per cent of the country's Gross Domestic

Product. As soil health deteriorates, crop yields continue to fall, placing increasing pressure on household food and nutrition security while heightening vulnerability among rural farming communities. Addressing this crisis requires urgent investment in sustainable land

management, improved soil fertility practices, and integrated watershed and landscape restoration efforts to safeguard Malawi's agricultural productivity and long-term development. {3.1.3}



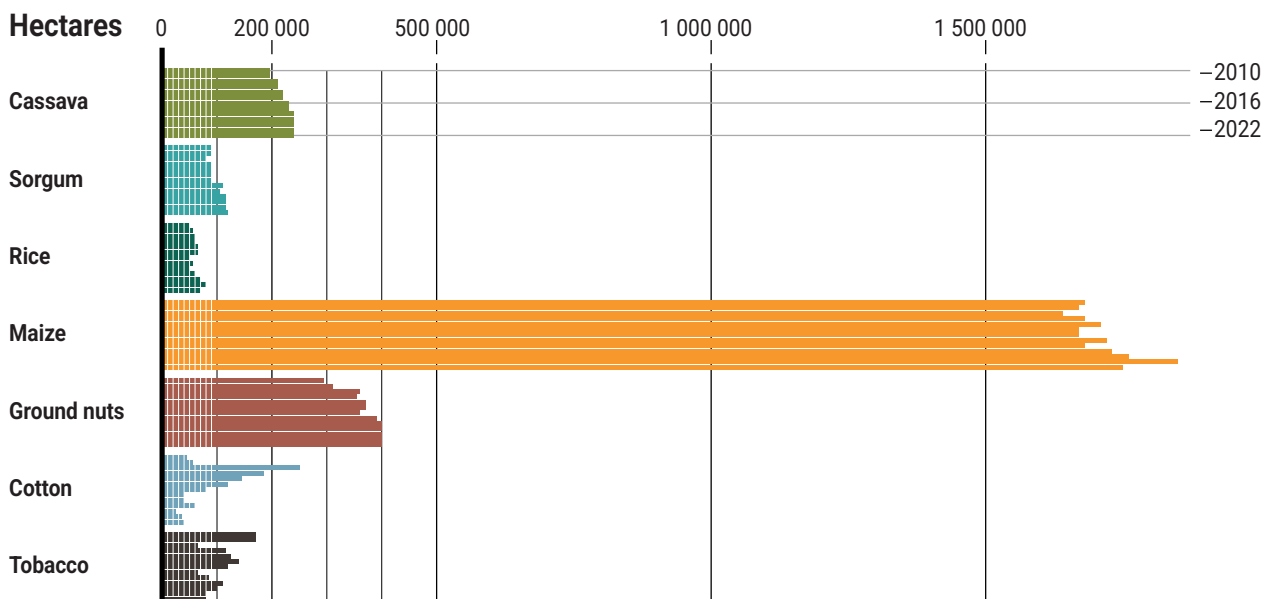
**Figure 2.2.1:** The soil loss rate across Malawi (Vargas and Omuto, 2016).

**Average landholding sizes are shrinking, undermining productivity and land stewardship** (*well established*). Farm sizes declined more than six per cent between 2010 and 2016, from an average of 0.78 to 0.73 hectares. As Figure 2.2.2 shows, the hectareage under crops continues to increase despite shrinking farm sizes. The fragmentation limits the adoption of sustainable practices and mechanization, while accelerating land overuse. {3.1.2}

**Maize dominates Malawi's agricultural landscape, yet yields have stagnated at levels far below the country's agronomic potential** (*well established*). Although maize occupies the largest share of cultivated land (Figure 2.2.2), national average yields remain below 2.5

tonnes per hectare, against the potential of 10 tonnes per hectare, which is 25 per cent of the potential yield (Figure 2.2.3). This persistent yield gap is driven by declining soil fertility, increasing climate-related stresses such as drought and erratic rainfall, and limited access to appropriate agricultural technologies, improved seed, fertilizer, herbicides, and knowledge of sustainable farming practices. Without targeted policy support to improve soil health, strengthen climate-smart agriculture, and expand access to extension and input services, Malawi's most important staple crop will continue to underperform, undermining food security and rural livelihoods. {3.2.4.1, 3.6, 7.3.1}

### Crop land areas

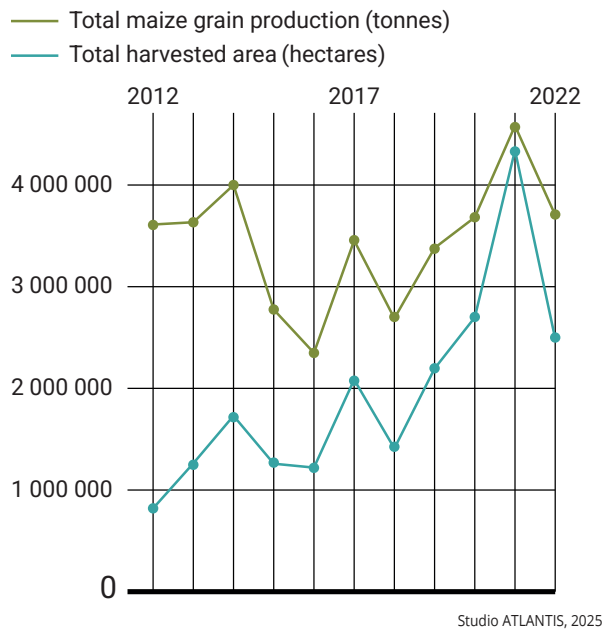


Studio ATLANTIS, 2025

**Figure 2.2.2:** Land sizes for different crops from 2010 to 2022 (FAO, 2024a).



## Maize: grain production and harvested area



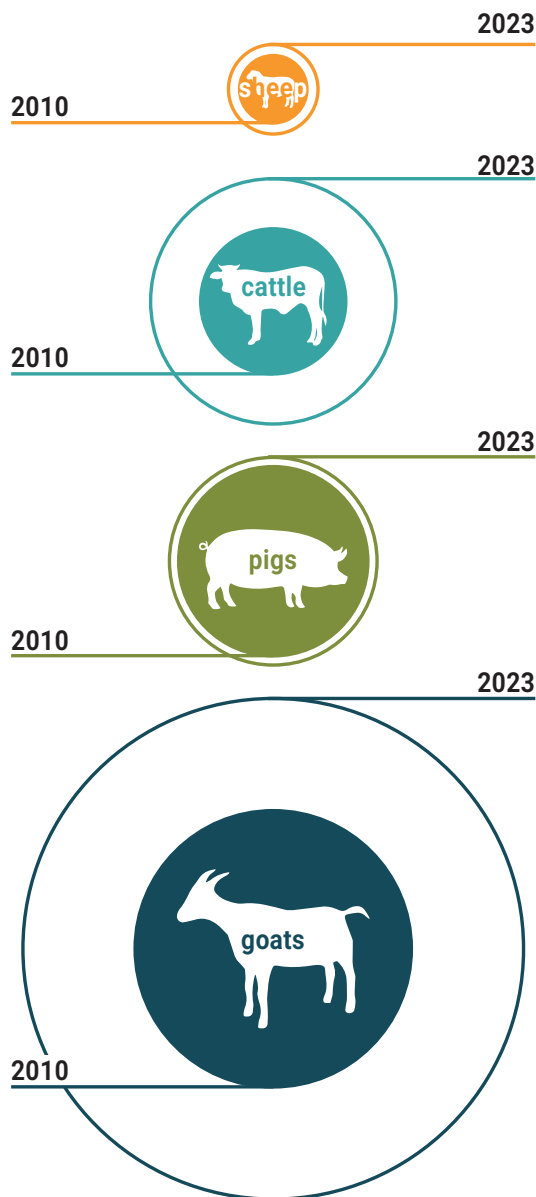
**Figure 2.2.3:** Total maize grain production and harvested areas trends between 2012 and 2023 (FAO, 2024b).

**Livestock population growth is placing substantial pressure on land and natural resources. For example, cattle numbers increased from 1 million to 2.2 million between 2010 and 2023 (well established).** Growth in livestock numbers (Figure 2.2.4) in Malawi is putting increasing pressure on land resources. Expanding grazing areas and the need for more land to produce feed crops have contributed to the conversion of forests and customary woodlands into agricultural land, reducing tree cover and accelerating land degradation. Overgrazing,

especially in areas where stocking rates exceed the land carrying capacity, has intensified soil erosion, depleted soil nutrients, and reduced the long-term productivity of rangelands and crop lands. These processes collectively undermine land quality and threaten the sustainability of agricultural systems. To address these challenges, Malawi requires targeted investments in sustainable rangeland management, improved grazing practices, and integrated land-use planning to protect the country's natural resource base. {3.2.2.2}



## Livestock population Number of animals



Source: FAO, 2024.

**Figure 2.2.4:** Livestock population trend from 2009 to 2023 (FAO, 2024c).

**Agricultural expansion in Malawi continues to drive substantial forest and biodiversity loss, undermining the ecosystems that support food, nutrition and water security** (*well established*). Malawi recorded a net forest decline of 5 per cent (1972–2009), followed by an additional 16 per cent loss between 2000 and 2023, equivalent to 247,000 ha of forest cover and 105 million metric tonnes of carbon dioxide (Mt CO<sub>2</sub>) emissions. Further assessments indicate an 8.4 per cent forest loss (2009–2018) alongside a 9.6 per cent increase

in agricultural land, reflecting strong pressure from population growth and unsustainable land and soil management (Figure 2.2.5). Without a transition toward sustainable agricultural intensification that increases productivity per unit area, continued deforestation is very likely. Strengthening land governance, improving soil management, and protecting remaining forest resources are critical for enhancing Malawi’s long-term resilience and safeguarding essential ecosystem services. {3.2.6}

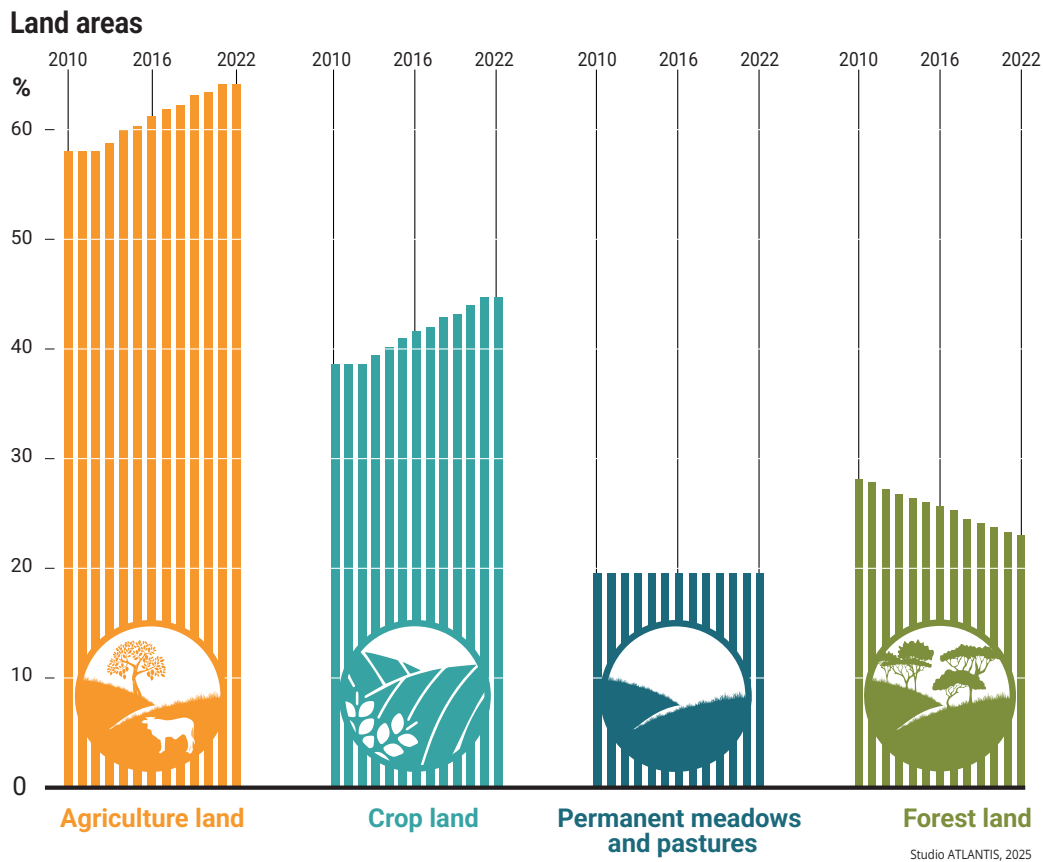


Figure 2.2.5: Land area use from 2010 to 2022 in percentage (FAO, 2024d).

## 2.3 Freshwater

Natural resources, and particularly freshwater resources, are at the direct receiving end of the compounded impacts of climate change, population growth, rapid urbanisation, environmental degradation, and increased human activities. These have created knock-on effects on water resources, leading to water pollution, catchment degradation, and reduced water availability (*well established*). The rise in global temperatures not only increases demand for water resources but also reduces water availability through evaporation. Rapid population growth has increased the demand for water across all its critical uses, including domestic, municipal, agriculture, industry, transport, and recreation. With limited alternatives to energy sources, deforestation has intensified over the years, further impacting water resources. The country has also experienced some of the worst natural disasters, including cyclones, which have caused severe floods, polluted water resources, and damaged water infrastructure. Additionally, droughts have been on the rise due to prolonged, erratic rainfall, significantly reducing crop yields. These rainfall patterns have exacerbated water pollution, negatively affecting the assimilation capacity of some water bodies. {4.1}

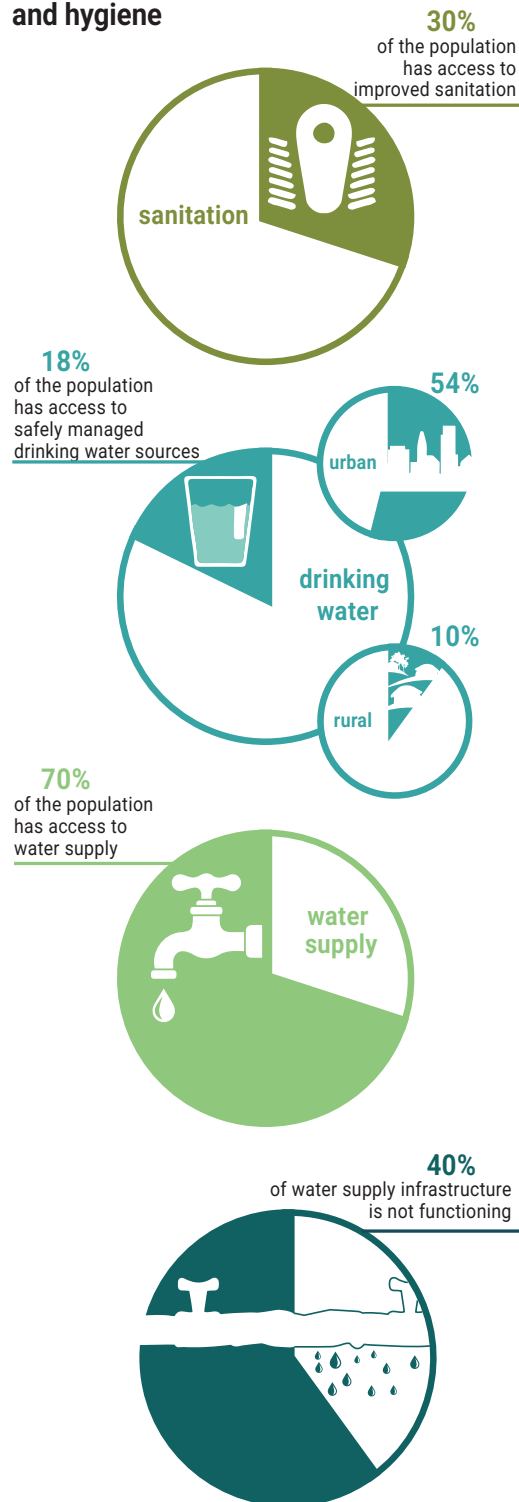
Across the country, surface water quality and, to some extent, groundwater, is poor and generally does not meet the WHO guidelines and Malawi Official Standards for potable water (*well established*). The poor water quality is attributed to several factors, including high population density, increased deforestation, pollution, unsustainable agricultural practices, poor land use practices, sedimentation, unregulated and unsustainable mining activities, and low access to sanitation services. {4.2.1.2, 4.2.2.2}

While the country has made tremendous progress, access to water, sanitation, and hygiene services are still low (*established but incomplete*). Only half of the population has access to improved sanitation. Overall budgetary support towards water, sanitation, and hygiene (WASH) services increased to MK205 billion (appr. US\$117 million in the 2024/25 national budget allocation). However, the country still needs approximately US\$97 million for universal basic coverage and US\$258 million for safely managed services by 2030. About 70 per cent of the population of Malawi has basic access to improved water supply services (Figure 2.3.1). Many still lack sustainable and clean water for domestic use, particularly in rural areas due to variations in rainfall distribution and high

breakdown rates (approximately 40 per cent) of water supply infrastructure. Poor sanitation infrastructure and practices in Malawi result in an annual economic loss of MK8 billion (US\$57 million) through increased healthcare

costs, reduced labour productivity and constrained tourism. This translates to 1.1 per cent annual loss in GDP. {4.2.3, 4.9.1}

### Service delivery on water, sanitation, and hygiene



Studio ATLANTIS, 2025

**Figure 2.3.1:** Service delivery on water, sanitation, and hygiene (WHO and UNICEF, 2019).

**Despite the country's natural endowment of water resources in rivers, lakes, and aquifers, competing water use has led to unequal allocations to different sectors** (*well established*). Per capita water allocation is declining. For example, there was an estimated 928 m<sup>3</sup> per person per year in 2017 compared to 1400 m<sup>3</sup> per person per year in 2013, with a projected decline to 403 m<sup>3</sup> per person per year in 2050. This trend is exacerbated by a rate of population growth that significantly outstrips water availability. As an agro-based economy, Malawi still relies heavily on agriculture; accounting for most of the water withdrawals. The unequal allocation of water resources has negatively impacted natural biodiversity, particularly the freshwater ecosystem. {4.7, 8.3.1, 8.3.2}

## 2.4 Biodiversity

**Malawi has diverse and unique biodiversity assets (well established)**. The country is home to over 17,000 recorded species, from invertebrates to mammals. Over 800 fish species are endemic to Lake Malawi, while 122 plant species, 11 invertebrates, two mammals and one bird species are endemic to the country. {5.0}

**Incomplete and biased biodiversity research and documentation contribute to the lack of data to inform decision making (well established)**. While documentation focuses on the visible and captivating organisms, further research in the areas of microorganisms and invertebrates is needed. These organisms represent the largest groups of living organisms. However, incomplete biodiversity data has led to many species, especially microorganisms, not being accounted for. {5.2.3.2}

**Biodiversity is important for Malawi, yet Ecosystem Services are undervalued (well established)**. Biodiversity supports livelihoods in the country through various

ecosystem services like food and timber, natural water purification and flood control, pollination and soil formation, as well as cultural advancement of traditional values and ecotourism. However, these are still undervalued. The government of Malawi developed a Payment for Ecosystems Services (PES) framework in 2022, aimed at translating ecological benefits into tangible financial incentives. While the PES framework is not yet fully operational, a study conducted in Dedza revealed a declining trend in the value of ecosystem services from US\$88.7 million in 1991 to US\$76.8 million in 2015. {5.1.1, 5.1.4, 5.2.2, 5.3, 5.4.2}

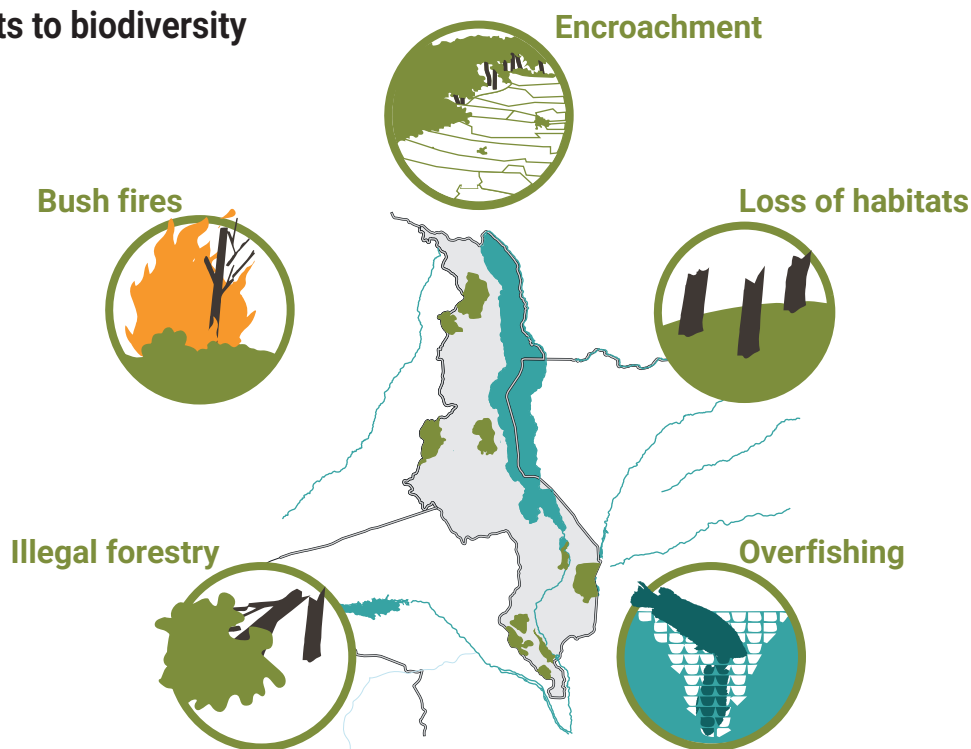
**Malawi's biodiversity has constantly declined due to combined impacts of unsustainable use and habitat loss (well established)**. Despite the value of ecosystem services, the country's biodiversity has been under a general declining trajectory (Figure 2.4.1). Though the value of biodiversity can sometimes be difficult to quantify, it is noted that rapid human population growth has increased pressure on natural resources, leading to increased deforestation, biodiversity loss, and degradation of ecosystem services. In addition, the fisheries sector that contributes about 1.1 per cent of annual GDP is under threat: populations of economically important species, such as chambo, continue to decline at rates of between 3 and 7 per cent from 2020 to 2023. {5.3.1, 5.4.2, 8.4.1}

**Malawi's biodiversity faces threats from multiple angles, including encroachment, bushfires, and habitat loss through agriculture and urbanization (Figure 2.4.2) (well established)**. These threats are changing and increasing with time. For example, while only 8.7 per cent of the bird population is increasing, 32 per cent shows declining trends. In 2024, the number of globally threatened bird species in Malawi increased by 233 per cent. {5.0, 5.2.2, 5.2.3.1, 5.3.6, 5.4.2}



Photo: Boniface Chimwaza

## Main threats to biodiversity



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**Figure 2.4.2:** Main threats to biodiversity in Malawi (Government of Malawi, 2015).

**In Malawi, deforestation remains a major driver of biodiversity loss with a total loss of 191,000 hectares of forest between 2010 and 2023 (well established).** Nkhata Bay and Mzimba districts accounted for forest loss of 74,600 hectares and 24,400 hectares respectively during the period from 2010 to 2023. There are steps laid down to restore 4.5 million hectares of degraded landscapes by 2030 in the National Forest Landscape Restoration Strategy 2020-2027. {5.1.2, 5.2, 5.2.1.1, 5.4.2}

**Malawi's economy significantly relies on its forestry resources to supply most of the country's timber and energy needs (well established).** Charcoal and firewood trade and use were valued at US\$352 million in 2017, representing 5 per cent of national wealth and 12 per cent of natural capital. However, this vital contribution is increasingly threatened by rapid depletion. Current forest harvests exceed sustainable yields by 71 per cent. Biodiversity loss, higher fuel costs, and loss of government and tourism revenue are other potential impacts of deforestation and forest degradation. However, if the forests are well managed, they can be a source of carbon trade revenue. {5.3.1}

**Agroforestry initiatives present an important opportunity to balance the need for biodiversity conservation and agriculture (well established).** Households that invest in fast growing tree species in their fields rely on these for firewood, relieving pressure on firewood sourced from protected areas. {5.2.3.2}

**There is a rising threat of invasive and alien species in Malawi (well established).** Over the past decade, the number of confirmed invasive and alien species in Malawi has increased. These include different types of bacteria, plants, and animals. Approximately 115 plant invasive alien species have been documented, while there is no comprehensive data for animal invasive alien species. Some of the examples of invasive alien species common to Malawi include *Eichornnia crassipes* (water hyacinth), *Mimosa diplotricha*, *Pinus patula* (Mexican pine), *Rubus ellipticus* (Himalayan raspberry), and *Pteridium aquilinum* (bracken fern). {5.1.4, 5.2.2, 5.4.5}

**Protected areas continue to play an important role in biodiversity conservation in Malawi and must be supported through adequate financing and training of staff (well established).** Between 2017 and 2025, Malawi made strides to understand its spatial biodiversity by publishing 3 versions of ecosystem maps. These maps established that Malawi's natural terrestrial ecosystems largely remain untouched in protected areas, whilst those in non-protected areas have been converted to agricultural ecosystems. {5.1.4, 5.2, 5.2.1.1, 5.3.4, 5.3.7, 5.4.1, 5.4.4}

**Malawi needs to practice fair and sustainable biodiversity use (well established).** Fair, equitable, and sustainable utilization of biodiversity is central to Malawi's aspirations for green growth, climate resilience, and national development. {5.0}

Malawi is piloting genetically modified cotton, cowpea, banana, and maize to improve food security and reduce pests and diseases. Despite the pilot activities operating under the national Biosafety Act (2014), there are widespread concerns on the safety on genetically modified technology (*well established*). The concerns include cross-pollination with local varieties, high seed licensing costs, and potential smallholder dependence on technology that requires foreign exchange. Scientific evidence confirms the nutritional and environmental safety of genetic modification maize and supports the safe and regulated use of genetically modified organisms, aligning with the Cartagena Protocol's view that biotechnology can address development challenges if managed responsibly. {5.4.6}

## 2.5 Air and climate

Malawi's deteriorating air quality and escalating climate risks are rooted in development challenges such as rapid population growth, deforestation, urbanization, and overreliance on biomass fuels (*well established*). Air pollution, driven by unchecked emissions from households, vehicles, industry, and agriculture, now ranks among the country's top public health threats, disproportionately affecting women, children, and the urban poor. Increased greenhouse gas emissions from land use change and biomass burning is also a growing concern. These dynamics reflect both global pressures and domestic governance gaps, which together amplify the country's exposure to climate-induced disasters. {6.1}

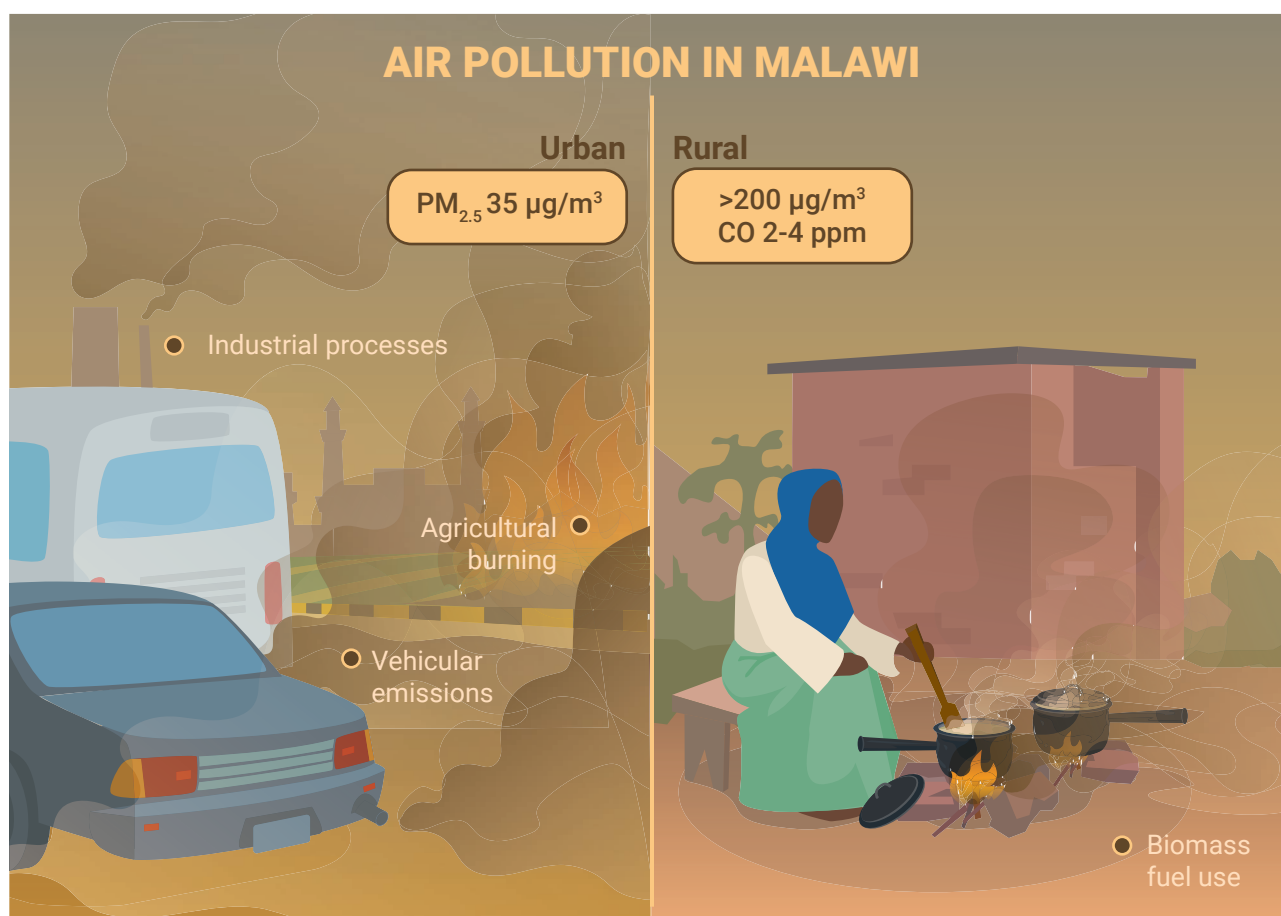


Figure 2.5.1: Rural and urban air pollution in Malawi (Saleh et al., 2021).

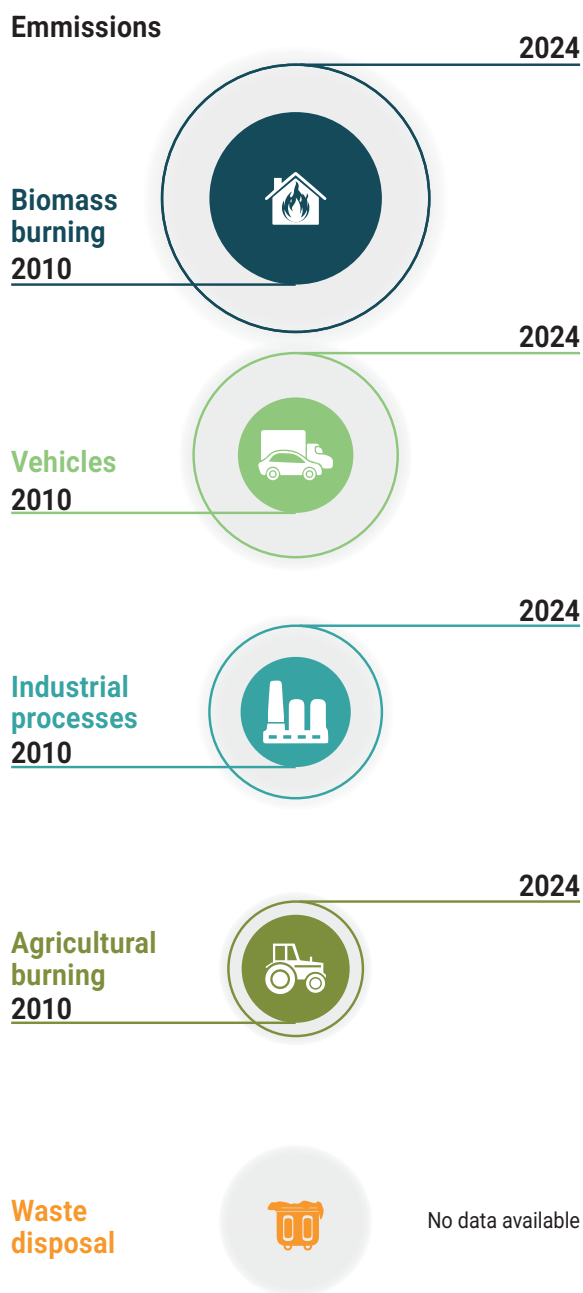
**Air quality in Malawi is under increasing pressure from a range of anthropogenic activities, with both urban and rural populations exposed to harmful pollutants that surpass international health thresholds (*well established*).** This is supported by observed particulate matter of maximum diameter of 2.5 micro-metres (PM<sub>2.5</sub>) levels in cities like Lilongwe, Blantyre, and Mzuzu averaging between 24 and 35 µg/m<sup>3</sup>, with peak concentrations exceeding 50 µg/m<sup>3</sup> in high-traffic and industrial zones.

This is more than double the WHO recommended limit of 10 µg/m<sup>3</sup> for ambient air quality. In rural areas, indoor air pollution linked to biomass fuel use consistently exceeds 200 µg/m<sup>3</sup> for PM<sub>2.5</sub>, with carbon monoxide concentrations reaching 2–4 parts per million in poorly ventilated kitchens, surpassing WHO health-based guidelines. {6.2.1, 6.2.2, 6.2.3}

The primary sources of air pollution in Malawi include biomass burning for cooking, vehicular emissions, industrial processes, agricultural burning, and poor waste disposal practices (*well established*). Emissions data from 2010 to 2024 reveal a sharp rise in air pollution across key sectors. Vehicular emissions doubled from 120,000 to 250,000 tonnes, driven by urban growth, increased car ownership, poor public transport, and aging, high-emission vehicles. Industrial emissions

rose by 25 per cent, reflecting growth in manufacturing, energy, and mining—particularly around urban centres. Agricultural emissions increased from 20,000 to 30,000 tonnes, mainly due to biomass burning, fertilizer use, and land clearing. Emissions from burning practices, including waste and crop residues, climbed from 120,000 to 150,000 tonnes, exacerbated by weak waste services and enforcement. {6.2.2, 6.2.3}

### Sources of air pollution



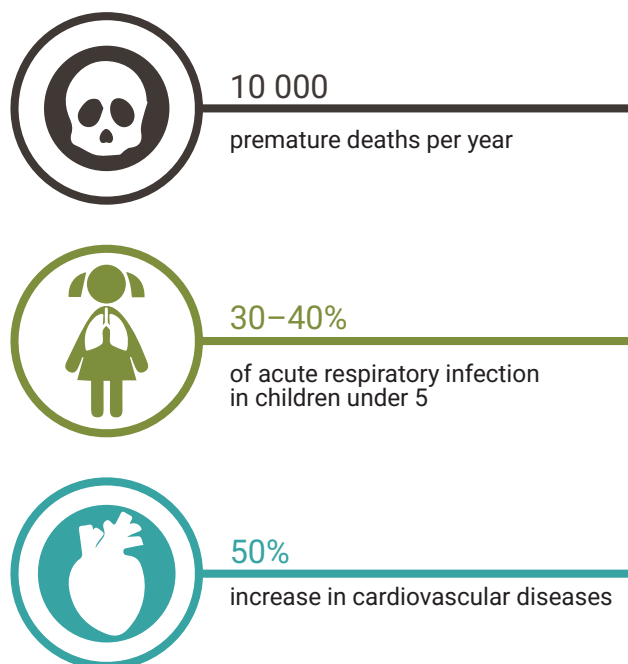
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**Figure 2.5.2:** Trends of pollution sources in Malawi (UNFCC, 2012; GOM, 2012; World Bank, 2019; CEIC Data, 2019; Emission Index, 2024; MCEA, 2012)

**Malawi's air quality monitoring network remains limited, with stations concentrated in major cities such as Lilongwe and Blantyre and lacking comprehensive national coverage, leaving rural and peri-urban pollution levels largely undocumented (well established).** Gaps in air quality standards, weak enforcement, and limited technical capacity continue to constrain effective air pollution management. While frameworks such as the Environment Management Act provide a legal foundation,

they lack pollutant-specific, legally binding thresholds for key pollutants like PM2.5, nitrous oxides and ozone, significantly reducing regulatory impact. Efforts to align national air quality standards with WHO guidelines are ongoing, but progress is hampered by institutional, financial, and enforcement limitations, leaving Malawi vulnerable to worsening air quality and its associated health and economic impacts. {6.2.5}

### Impacts of air pollution on human health



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**Figure 2.5.3:** Impacts of air pollution in Malawi (World Bank, 2022).

**Broader adoption of clean energy solutions and sustainable transport alternatives is urgently needed to reverse Malawi's worsening air quality (well established).** The country's Nationally Determined Contribution (NDC) provides the critical path to address climate mitigation. Without swift energy diversification through expanded access to electricity, clean cooking technologies, and renewable energy, combined with transport reforms that promote low-emission mass public vehicles, air quality will continue to deteriorate, undermining public health and sustainable development efforts. NDC implementation faces key barriers that include institutional capacity gaps and insufficient monitoring and data collection systems. {6.2.4, 6.3.4}

**Malawi is experiencing a clear warming trend, with maximum temperatures during October–December showing an increase since the 1990s, and minimum temperatures rising steadily from 1991 to 2025 by 0.02°C per year (well established).** The Shire Valley faces the highest heat stress, with temperatures exceeding 40°C and

anomalies up to 7°C above historical norms. These trends are intensifying droughts, water scarcity, and heat stress on crops, livestock, and human health. The patterns align with global climate projections and highlight the urgent need for climate adaptation in agriculture, health, and water resource planning. {6.3.2}

**Greenhouse gas emissions in Malawi are dominated by the agriculture sector, followed by energy and waste (well established).** Methane emissions from livestock and nitrous oxides from agriculture remain the primary contributors to greenhouse gas emissions. Carbon dioxide emissions are rising from fossil fuel use, especially in transport, and unmanaged waste. Though per capita emissions remain low, national emissions could rise by 38 per cent by 2040 without targeted action. This increase—driven by agricultural expansion, energy demand, land-use change, and population growth—calls for urgent, sector-specific mitigation in agriculture, energy, and waste to curb emissions and build climate resilience. {6.3.5}

**Malawi faces escalating climate risks as heatwaves, droughts, cyclones, severe storms, tornadoes, lightning, and floods intensify; straining food systems, water resources, and public health** (*well established*). The 2022/2023 drought season had a late onset of the rains, wrecked maize harvests, and sparked pest invasions, most notably red locust swarms and armyworm outbreaks. Cyclones Freddy, Gombe, Ana, and Idai unleashed deadly floods, forced mass displacements, and tore apart roads, bridges and homes; burdening the country's poor families the most. The pattern, consistent with regional projections, reveals systemic vulnerability, compounding inequalities, and shrinking recovery windows that heighten the likelihood of recurrent humanitarian needs and long-term development setbacks. The combined effect of droughts and floods erodes Malawi's annual economic growth by 1.7 per cent. {6.3.7, 8.2, 8.2.4, 8.2.5}

## 2.6 Data challenges

**Malawi's progress towards the Sustainable Development Goals, Malawi Agenda 2063 (MW2063), and effective environmental management are constrained by serious data gaps, weak monitoring systems, and limited institutional coordination** (*well established*). Weak environmental data systems affect Malawi's ability to forecast and prepare for climatic shocks; monitor air and water pollution; manage forests, land degradation, and biodiversity loss; design and evaluate climate and environmental policies; attract climate finance and support district-level planning and community resilience. {8.2}

**Environmental data in Malawi; including on land use, biodiversity, forest cover, water quality, climate and pollution levels; is governed by a patchwork of laws and policies** (*well established*). These laws shape what data is collected, who can share or access it, and how it must be protected. Key policies and laws on environmental data include the National Statistics Act (2013), Access to Information Act (2016), Data Protection Act (2024), and Electronic Transactions and Cybersecurity Act (2016). There are also sector-specific data policies such as National Meteorological Policy (2019), Extractive Industries Transparency Initiative (EITI) (2016), National Health Information System Policy (2015) and National Information and Communications Technology (ICT) Policy (2013). {8.3.1}

**Though there are laws that govern data collection and sharing, there are still inadequate baseline and monitoring systems** (*well established*). Data on environmental indicators are not routinely collected or harmonised. Environmental data is scant, inaccurate, inconsistent, and fragmented across various sources. There is no standardisation, leading to comparability and quality challenges. {8.3.1, 8.3.2, 8.4.1}

**There is poor data storage, management and accessibility** (*well established*). Poor data sharing between agencies, manual and patchy storage systems, and limited data

analysis expertise are some of the main challenges. Large volumes of environmental data remain in paper files, excel sheets, or siloed systems. Metadata is incomplete, databases are outdated, and open-data portals are limited. This reduces transparency and slows decision-making. The contributing factors include inadequate funding, lack of human and infrastructural capacity, and poor data integration and storage practices. {8.3.2, 8.3.3}

**Institutional capacity for data management is fragmented** (*well established*). Environmental data is collected by many ministries, departments, and projects; often using different methods, formats, measurement, and reporting standards. There is no central, interoperable system for sharing data, which creates duplication, inconsistencies, and gaps in national reporting. Lack of clear quality-control procedures means that datasets are often not robust enough for policy decisions, Environmental Impact Assessments, or national reporting (e.g., for Sustainable Development Goals, Nationally Determined Contributions). The data is usually restricted and not open-access. {8.3}

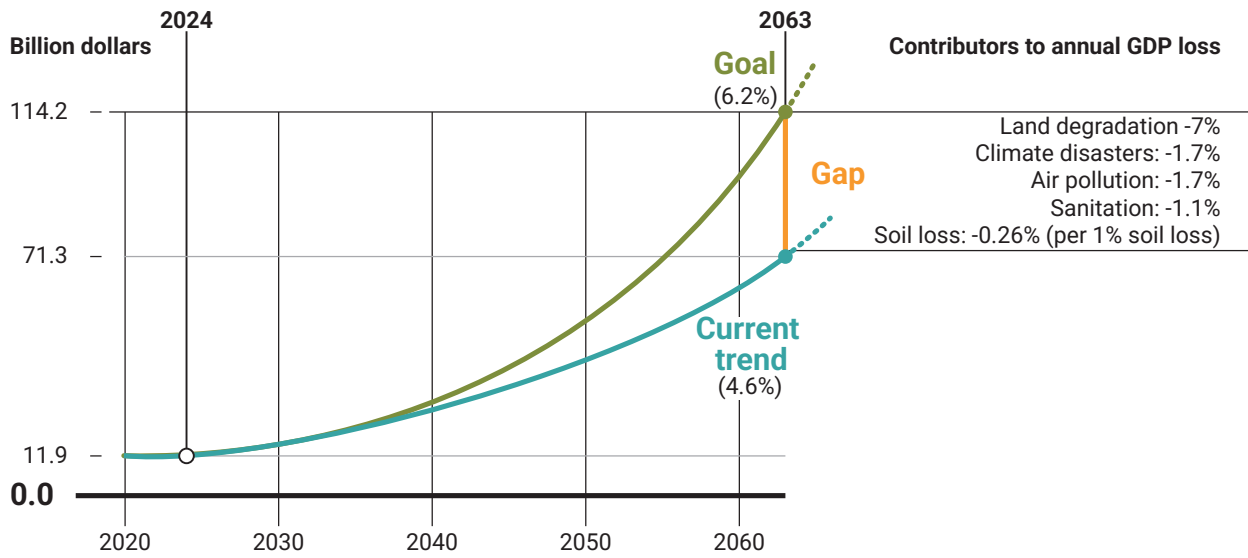
**There is lack of investment in statistical capacity and satellite data management** (*well established*). There is insufficient investment in data infrastructure, statistical literacy, and capacity building for data producers and users. Environmental monitoring equipment is costly. Funding is irregular and heavily dependent on donor projects, leading to unsustainable systems once projects end. Adoption of modern technologies such as automated sensors, satellite tools, and real-time dashboards is limited. Government agencies lack sufficient specialists in environmental statistics, Geographical Information Systems, remote sensing, data science, and equipment maintenance. This weakens data analysis, interpretation, and use in planning and budgeting. {8.3.3}

**Policy reforms should include resource and capacity mobilisation to support standardised data collection, digitisation, data integration, coordination, research, and awareness on key laws and policies and capacity building** (*well established*). Malawi's policy reforms should highlight the urgent need for updated and accessible data systems to counteract fragmented, outdated, or inaccessible information. {8.1, 8.3, 8.5}

## 2.7 Implications of environmental change

**Malawi Agenda 2063 recognizes environmental sustainability as an enabler, requiring an annual economic growth rate of up to 6.2 per cent of GDP for it to be achieved. However, the average GDP growth rate between 2019 and 2022 was 4.6 per cent, revealing a significant gap between aspirations and reality** (*well established*). While numerous factors influence economic progress, the substantial impact of environmental factors is significant to derail such ambitious economic visions. These environmental factors include land degradation, climate extremes, air pollution, sanitation, and soil loss (Figure 2.7.1.). {8.1.5, 8.2, 8.4, 8.4.1}

## Malawi Vision 2063: Gap in GDP growth rate



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Figure 2.7.1: Gap in GDP growth rate (Government of Malawi, 2020).

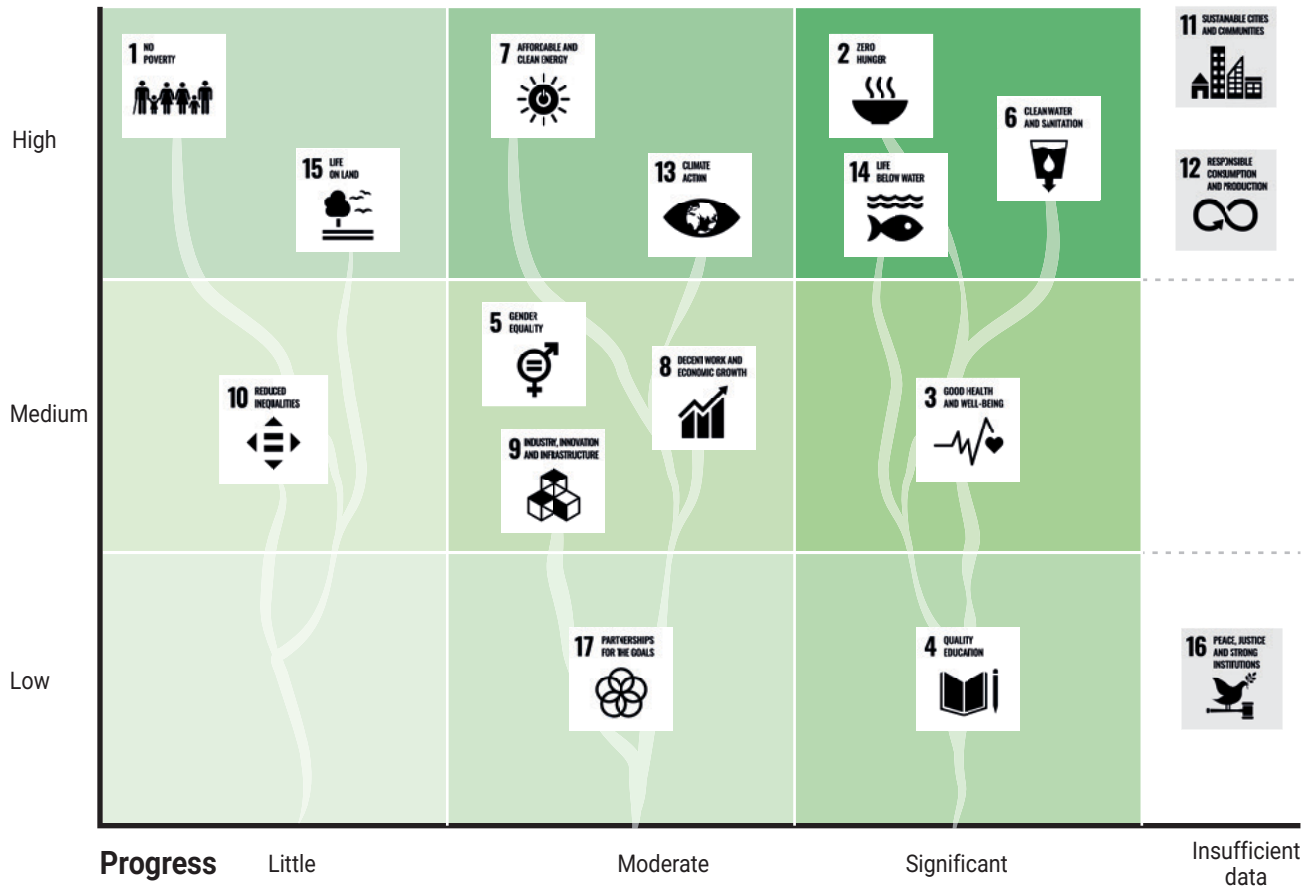
While at least four environmentally focused Sustainable Development Goals (SDGs) show significant progress, indicating positive momentum in ecological preservation, the broader SDG agenda faces substantial implementation challenges (*well established*). Core goals

vital for human well-being and equitable development; including SDG 1 (No Poverty), SDG 10 (Reduced Inequalities), and SDG 15 (Life on Land); are severely lagging, threatening the holistic achievement of the 2030 Agenda (Figure 2.7.2). {8.3}



## Sustainable Development Goals progress and environmental link

### Environmental link



The Sustainable Development Goals progress conducted in 2022 (horizontal axis) categorised based on their relevance to environment (vertical axis).

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**Figure 2.7.2:** Malawi’s progress on some environmentally relevant Sustainable Development Goals (Government of Malawi, 2022).

**Malawi faces poor waste management (well established).**

The increase in population results in increased waste that calls for proper management. Alarmingly, only 10 to 15 per cent of urban wastewater is collected through formal sewerage systems, leaving the rest to be discharged untreated, often into water sources or open areas. Similarly, an estimated 70 per cent of municipal

solid waste (MSW) does not undergo official disposal, leading to widespread illegal dumping and accumulation in public spaces. The current situation underscores an urgent need for substantial investment in infrastructure, policy reform, and public awareness campaigns to develop comprehensive and sustainable waste management solutions across the nation. {8.1.4, 8.3.3}



Photo: Glory Muva

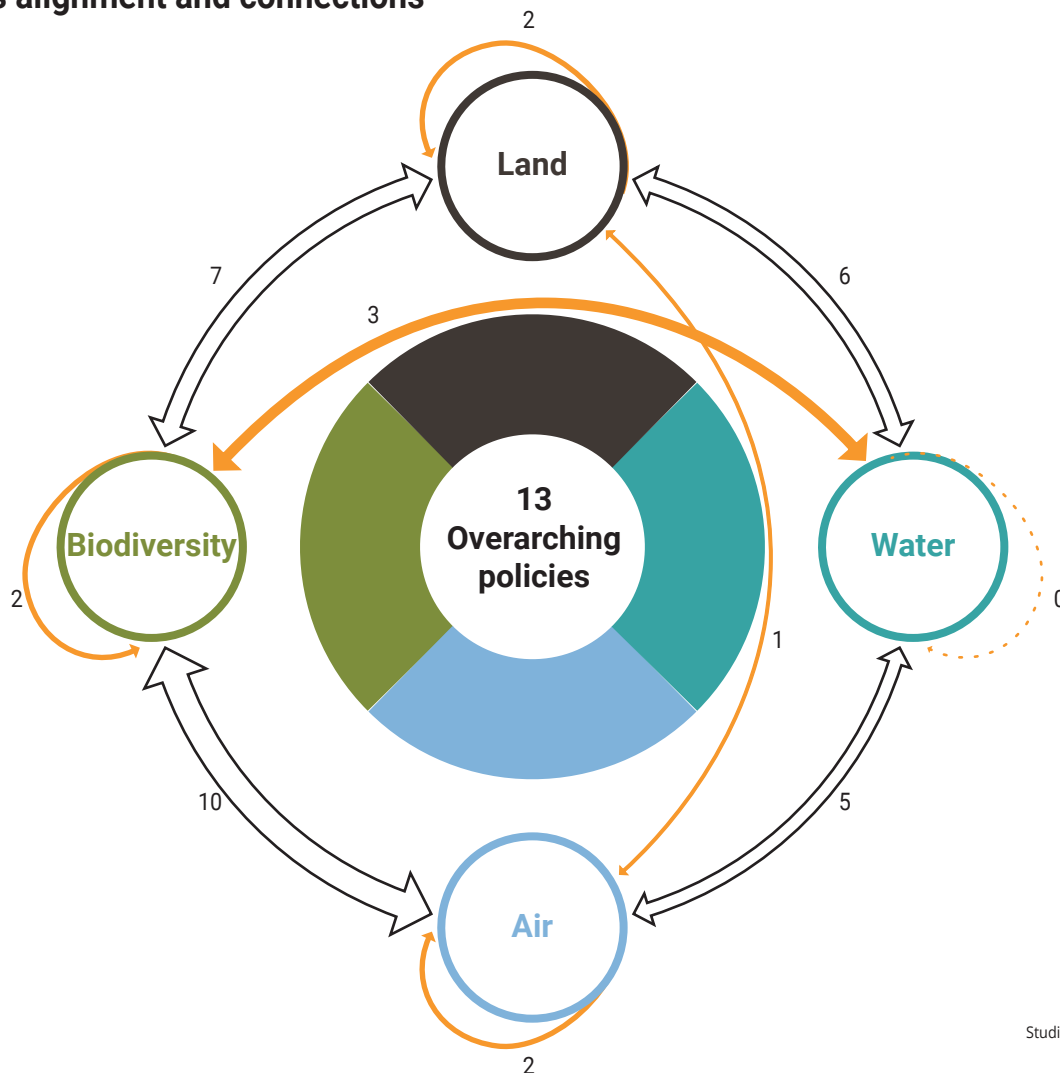


# 03 Policy responses and their effectiveness

Malawi's environmental policies<sup>1</sup>, over 40 of which are examined in this report, reveal a profound interconnectedness, extending into across diverse sectors (well established). About 10 policies address air

and biodiversity, while 7 policies together address land and biodiversity, 6 address water and land, and 5 water and air (Figure 3.1 and Table 3.1). {9.5}

## Policies alignment and connections



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**Figure 3.1:** Environmental related policies in land, water, air and biodiversity and their interactions.

<sup>1</sup> Policies in this case means acts, policies and frameworks.

Since 2010, efforts have been made to develop, review, or amend some environmental policies (*well established*). These policies address a broad spectrum of issues including pollution control, land ownership, water resources management, climate change, disaster management strategies, and Indigenous and Local Knowledge. The policies support the interventions of various environmental aspects including the co-management of wildlife and forestry, introduction of concessions, improved early warning systems, greenhouse gas inventories, promotion of energy alternatives, conservation of endemic species, regulations against illegal logging, agroforestry expansion, improved access to water, sanitation and hygiene improvements, and climate

change adaptation measures (Table 3.1). {9.17.1.1, 9.17.2.1, 9.17.2.2, 9.17.2.3, 9.17.2.4, 9.17.3.1}

**Even with comprehensive laws and policies designed to protect the environment, deforestation, land degradation, and pollution have continued to accelerate** (*well established*). For example, the annual rate of forest loss rose from 2.6 per cent in 2010 to 2.8 per cent in 2025. This trend directly reduced the nation’s forest cover, which shrank from 22 per cent of the total land area in 2010 to 20 per cent in 2023. Concurrently, the health of agricultural land has significantly deteriorated. In 2010, half of the country’s arable land was considered degraded, and this increased to 80 per cent in 2025. {9.8.1.1, 9.8.1.4}

**Table 3.1:** Some of the environmental achievements since 2010

Relevant policies and legislation from 2010 to 2025	Implementation response
Overarching policies: Environment Management Act (2017), National Resilience Strategy (2018 – 2030), National Decentralization policy (2024), National Urban Policy (2019), National Population Policy (2023), National Gender Policy (2015), Gender Equality Act (2013), National Agriculture Policy (2016), Disaster Risk Management Act (2023)/Policy (2015)	<ul style="list-style-type: none"> <li>● Protection and management of the environment</li> <li>● Promote local governance and community-led development</li> <li>● Sustainable development</li> <li>● Enhancing prioritization, coordination, and implementation of programmes</li> <li>● Addressing gender inequalities</li> <li>● Climate risk measures</li> </ul>
Land policies: Land Act (2016), National Land Resources Management Policy, National Forest landscape Restoration Strategy, Customary Land Act (2016), Mines and Mineral Policy (2013), Agriculture Land Resources Management Policy (2024), National Agriculture Policy (2025), Agricultural Land Resources and Management Policy (2025), Land Acquisition Act (2016)	<ul style="list-style-type: none"> <li>● Management of land uses concerning customary land</li> <li>● Secures land tenure for smallholder farmers</li> <li>● Promotes sustainable land use</li> <li>● Promote sustainable mineral resource development while ensuring environmental protection and biodiversity conservation</li> <li>● Promotion of sustainable agricultural practices</li> </ul>
Air and climate policies: National Climate Change Management Policy (2016), National Adaptation Plan Framework (2020), Nationally Determined Contributions (2021), Atomic Energy Act (2011), The Atomic Energy Regulations (2021), National Energy Policy (2018), AERA Strategic Plan (2021–2030), Meteorological Policy (2019), National Framework for Water and Climate Services (2024–2029)	<ul style="list-style-type: none"> <li>● Improved early warning service delivery</li> <li>● GHG inventories</li> <li>● Climate change adaptation and mitigation efforts</li> <li>● Ensure the safe use of nuclear energy and radiation sources</li> <li>● Air pollution strategy</li> <li>● Energy efficient efforts</li> </ul>

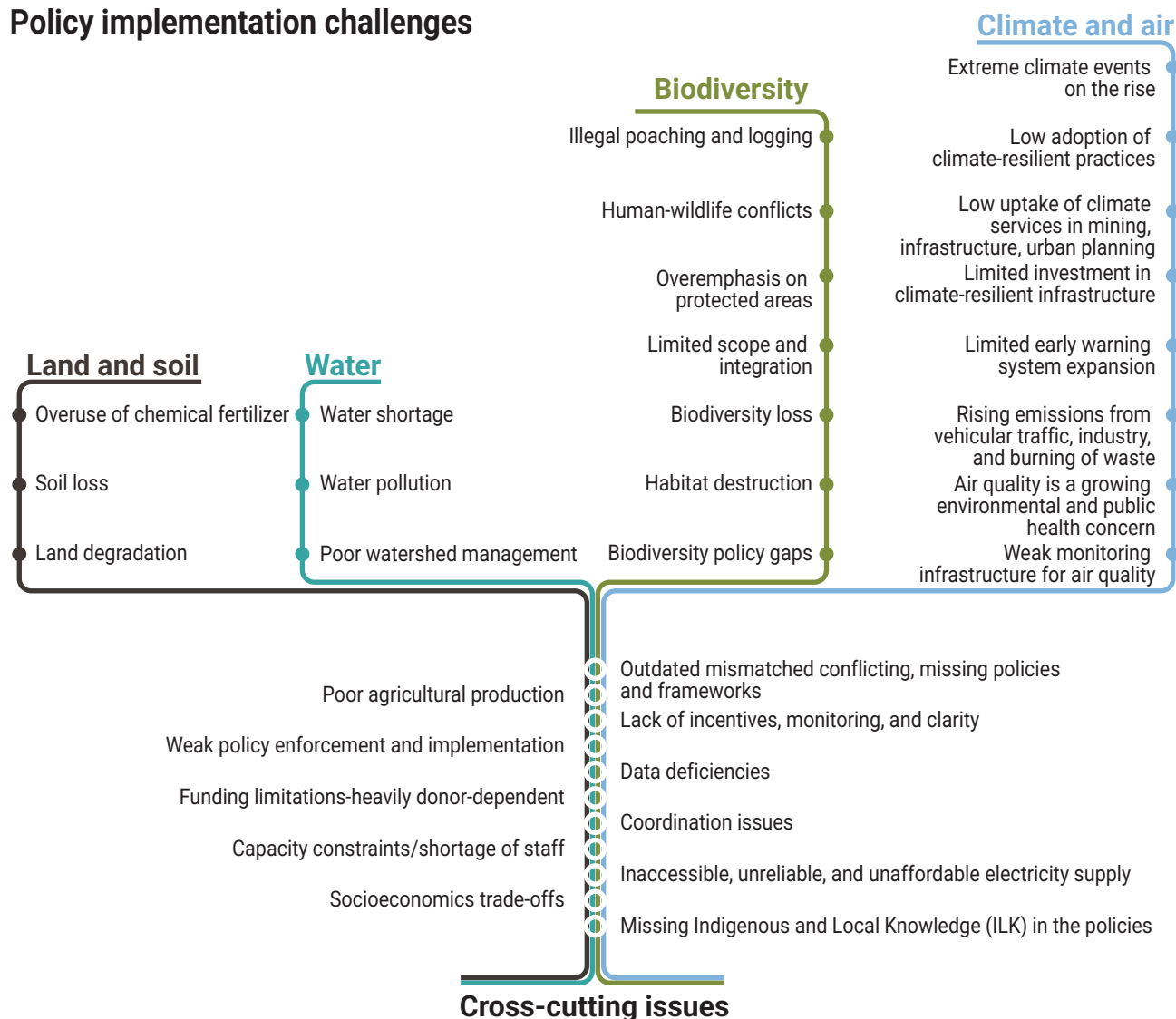
Relevant policies and legislation from 2010 to 2025	Implementation response
<p>Biodiversity policies: Forest Act Amendment (2020), Renewable Energy Strategy (2017–2030), National Biodiversity Strategy and Action Plan II (2015), National Forest Landscape Restoration strategy (2018–2030), National Charcoal Strategy (2017–2027), Wildlife Policy (2018), National Parks and Wildlife Act (2017)</p>	<ul style="list-style-type: none"> <li>● Promotion of biodiversity awareness</li> <li>● Wildlife and forestry co-management</li> <li>● Introduction of concessions</li> <li>● Conservation of endemic species</li> <li>● Regulations against illegal logging</li> <li>● Agroforestry expansion</li> <li>● Protected area management</li> <li>● Sustainable use initiatives such as co-management of forests and National Charcoal Strategy</li> <li>● Promotion of biodiversity awareness</li> <li>● Promotion of natural resource conservation</li> <li>● Promotion of alternative energy sources</li> </ul>
<p>Water policies: Water Resources Act (2013), National Water Resources Policy (2023), Fisheries and Aquaculture Policy (2016), Irrigation Policy (2024), National Aquaculture Strategic Plan (2021–2031), National Irrigation Policy (2024), Greenbelt Initiative (2010)</p>	<ul style="list-style-type: none"> <li>● Pollution control</li> <li>● Improved access to water and sanitation</li> <li>● Water resource management</li> <li>● Sustainable fishing</li> <li>● Sustainable irrigation</li> </ul>

**There has been some progress in some key environmental areas. However, formidable challenges persist, impeding the full realization of Malawi’s collective policy responses** (*well established*). The enduring nature of these obstacles is often multifaceted, stemming from structural failures—including persistent resource limitations, critical gaps in policy implementation, and severe data deficiencies—and destructive socio-economic patterns. The most critical among these is the over-reliance on extracting natural

resources without necessary sustainability frameworks. This unsustainable exploitation generates a damaging feedback loop: further accelerating land degradation that directly results in heightened pollution, intensifying extreme climate events, widespread biodiversity loss, and diminished agricultural harvests. All these aggravate poverty, food insecurity, economic instability, infrastructure vulnerability and damage, ecosystem degradation, and loss of GDP (Figure 3.2). {9.17.3.2}



## Policy implementation challenges



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**Figure 3.2:** The challenges and gaps identified in this report. The problems are presented per thematic area (land, water, biodiversity and air). Cross cutting issues are challenges that are applicable across all the four themes.

Encouragingly, amidst these ongoing struggles, a diverse array of innovative interventions and technologies have been piloted and proven effective in addressing many of the country's environmental challenges, showcasing tangible improvements and scalable potential (*well established but incomplete*). These solutions, which have demonstrated a clear capacity to accelerate progress and deliver transformative impact, include (established but incomplete):

- Promotion of community-based natural resource management and empowering nature-based solutions and indigenous and local knowledge
- Leveraging on technology to support monitoring, enforcement, and data-driven decision making
- Scaling up land restoration programmes beyond pilot projects
- Providing subsidies and incentives to accelerate the adoption of alternative energy sources
- Unlocking private sector capital to finance and manage complex environmental challenges

- Promoting ecosystem payment services and nature-based tourism revenues
- Promotion of climate smart techniques based on climate informed decisions
- Enhancement of water, sanitation and hygiene investments
- Reduction of fertility rate from 5.7 births per woman in 2010 to 3.7 births per woman in 2018
- Life expectancy increased, from 48 years in 2008 to 62 years in 2018 for males, and from 51 years in 2008 to 68 years in 2018 for females
- Human development index increased by 12 per cent from 2010 to 2019. {9.13.2, 9.8.1.1}



Photo: Glory Muva



# 04 Changing the path we are on

## 4.1 Malawi's environmental outlook

**Additional policies and changes in behaviour and practices are needed in order to reverse trends in environmental degradation and ensure the achievement of goals and targets under the Sustainable Development Goals and Malawi Agenda 2063 (*well established*).** Under the Business as Usual scenario population growth, urban expansion and sluggish economic development will cause a significantly increased demand for food, energy and water. Human population density in Malawi, which increased from 157 persons per km<sup>2</sup> in 2010 to 230 persons per km<sup>2</sup> by 2024, will remain one of the major drivers of environmental change in Malawi. The lack of alternative and cheaper fuel sources is a significant environmental pressure, which will result in an insignificant shift in the 96 per cent contribution of biomass to energy for cooking. {10.4}

**Despite having ambitious policies such as Malawi Agenda 2063, the country is not on track to achieve the environmental dimension of the targets and goals for energy, health, food and nutrition, and waste management (*established but incomplete*).** Progress is too slow to achieve these targets and goals due to lack of political will and institutional support. The Policy First scenario is good on paper but weak in practice without significant institutional reforms. {10.5}

**Pathways for transformative change are possible for a healthy and prosperous population and healthy environment in Malawi, where goals and targets as those under Malawi Agenda 2063 are achievable (*established but incomplete*).** Strong institutions and clear pathways result in a transition towards resource use efficiency, and sustainable consumption and production of food, energy and water leading to universal access to basic human needs in an environment where the impacts and magnitude of land degradation, climate disasters, air pollution and water stress are reduced. Measures to strengthen human livelihoods and institutional capacity lead to the creation, preservation, protection, and sustenance of value of the environment; with society advancing towards a future that we want (Target Seeking Scenario). {10.6}

## 4.2 Suggested options for action

**The NSEOR calls for a fundamental policy shift from fragmented rules to a coordinated, integrated framework that is overseen by an inter-ministerial committee operating through the environment ministry (*well established*).** Key to success are coordination mechanisms backed by systematic monitoring, enforcement, and regular reporting. Accelerating this transition will require genuine cross-sector collaboration so that environmental programmes reinforce rather than duplicate one another. The policy shift must embed a full-cycle system including clear implementation steps, and robust data collection. The institutionalisation of the reforms will tighten implementation, boost accountability, and eliminate the policy incoherence that currently blocks sustainable-development opportunities. {11.1.7, 11.2.1}

**The NSEOR calls for strong human-centred environmental policies (*well established*).** Some of the existing environmental policies exhibit significant gaps, primarily by treating environmental issues in isolation and failing to adequately link them with broader socio-economic factors such as livelihoods. For example, overemphasizing "protected areas" without linking this to the needs of the communities around is likely to result in failure. This oversight hinders a comprehensive approach, as sustainable environmental solutions must inherently support the well-being and economic stability of local communities through food security, energy access, human health and waste management with consideration for women empowerment. {9.17.3.2, 11.12.1}

**NSEOR calls for systemic behavioural change for sustainable development (*well established*).** While national policies provide the essential framework, true sustainability is possible when individuals, communities, and local councils actively embrace and implement the policy principles. One powerful approach in behavioural change lies in fostering competitive programmes and awards at the local level, such as among villages, wards, or districts. Such friendly rivalry could ignite a powerful sense of community pride and collective responsibility, translating into tangible advancements across key areas like large-scale reforestation, comprehensive

waste management, enhanced community cleanliness, innovative water harvesting and irrigation systems, and the adoption of renewable energy alternatives. Empowering local leaders to establish and enforce community-specific environmental bylaws will reinforce conservation efforts at the grassroots level: for instance laws to reduce bush fires. {11.1.1, 11.1.2, 11.1.6}

**NSEOR proposes the consolidation of the Environment and Natural Resources Management funds, diversification of revenue collection streams, and appropriation of portions of public and donor funds to the environment** (*well established*). The fund would reduce risk and incentivize critical climate initiatives, such as renewable energy deployment and emissions-reduction projects, by providing targeted financial support. Beyond cutting carbon, these investments drive economic renewal by creating high-quality jobs, promoting innovation, and driving sustainable growth. Scaling such efforts demands policy frameworks that actively lower investment barriers. In addition, the funds would support land restoration programmes and climate risk interventions in the communities and local councils. {11.1.5}

**NSEOR calls for the strengthening of collaboration between regulatory authorities; including Malawi Environment Protection Authority (MEPA), National Water Resources Authority (NWRA), and Malawi Electricity Regulatory Authority (MERA); and law enforcement entities such as the Anti-corruption Bureau and Police in the creation of a dedicated tracking system to ensure that all illegal environmental practices face thorough investigation and legal recourse** (*well established*). The integrity of environmental laws is compromised when law enforcement officers succumb to bribery, rendering them ineffective. The NSEOR advocates for good governance principles such as integrity, accountability, and the rule of

law as crucial deterrents against such illegalities. A “name and shame” strategy, publicly exposing wrongdoing, is also proposed as one of the supplementary measures. {11.1.1}

**NSEOR calls for the promotion of circular economy approaches and mandatory waste recycling to mitigate environmental impacts and promote resource use efficiency** (*well established*). The policy should also include the provision of tax breaks, grants, or subsidies for entities that invest in recycling infrastructure or processes that turn waste into new products. {11.3.4, 11.3.5}

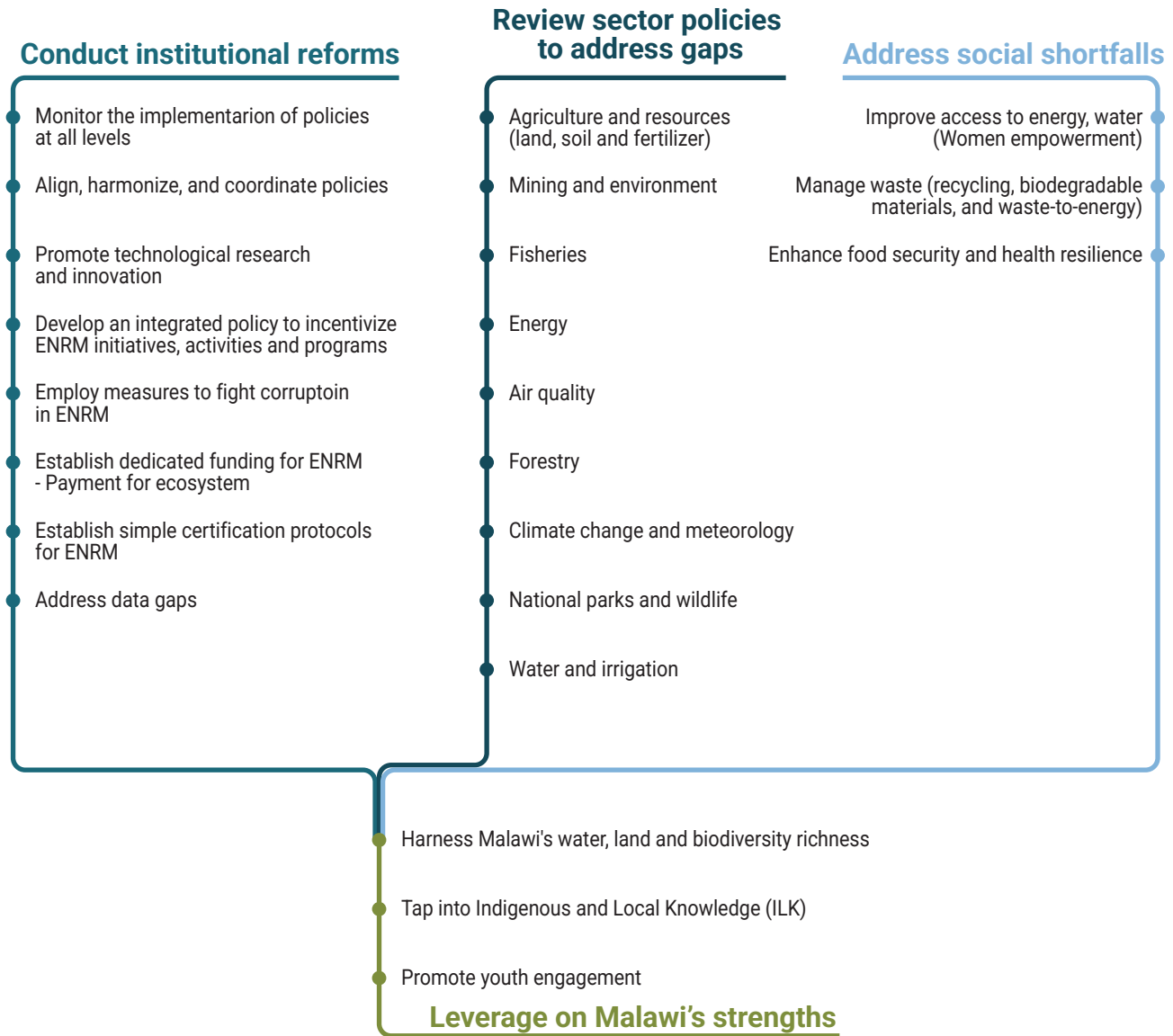
**The NSEOR calls for substantial and sustained investments across the chain of environmental data collection, standardization, and access** (*well established*). This encompasses not only financial resources but also technological infrastructure, human capital, and dedicated long-term funding. This will significantly enhance the capacity to understand environmental trends. Moving beyond observations, the data will support the development of verifiable and quantifiable insights into the severity and rate of change of environmental degradation and recovery in areas such as water, biodiversity, and air quality. {11.1.4}

**Despite persistent gaps and challenges in the implementation and enforcement of its environmental policies, the nation possesses an underestimated engine for transforming its sustainability trajectory. The youthful population, abundant water resources, rich biodiversity, and land assets, together with the rich indigenous and local knowledge systems, provide the basis for sustainable economic growth** (*well established*). If each of these components is strategically leveraged, there is immense potential to shift the country towards a more resilient and regenerative future. (Figure 4.2.1) {11.3}



Photo: Kondwani Jere

## Environmental sustainability policy reforms and systematic behavioural change



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**Figure 4.2.1** Summary of policy options to develop a sustainable environment through policy reforms and systematic behavioural change leveraging on Malawi's strengths.

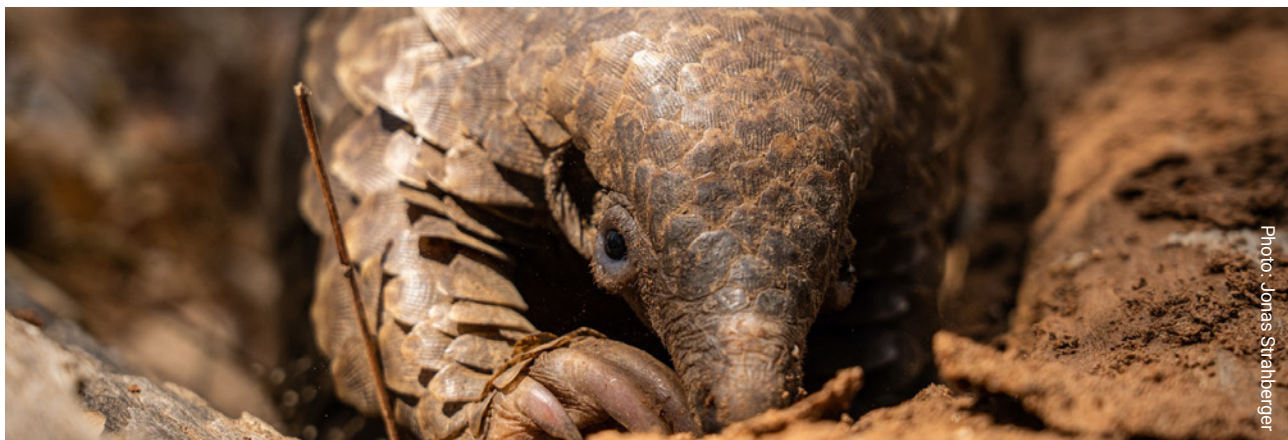


Photo: Jonas Strahberger

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