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Report on the technical expert review of the first biennial transparency report of Malawi*

Summary

This report presents the results of the technical expert review of the first biennial transparency report of Malawi, conducted by a technical expert review team in accordance with the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement, and capacity-building needs identified by the Party and by the technical expert review team in consultation with the Party during the review. The review took place from 11 to 15 May 2026 in Kigali.

* In the symbol for this document, 2025 refers to the year in which the biennial transparency report was submitted, not to the year of publication.

Please recycle

Abbreviations and acronyms

2006 IPCC Guidelines	*2006 IPCC Guidelines for National Greenhouse Gas Inventories*
A6.4ER	emission reduction under Article 6, paragraph 4, of the Paris Agreement
AD	activity data
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BTR	biennial transparency report
CER	certified emission reduction
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CRT	common reporting table
CTF	common tabular format
EF	emission factor
GHG	greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
ITMO	internationally transferred mitigation outcome
LULUCF	land use, land-use change and forestry
MPGs	modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement
N_2O	nitrous oxide
NA	not applicable
NDC	nationally determined contribution
NE	not estimated
NID	national inventory document
NIR	national inventory report
PaMs	policies and measures
PV	photovoltaic
QA/QC	quality assurance/quality control
TERT	technical expert review team
WAM	‘with additional measures’
WM	‘with measures’
WOM	‘without measures’

I. Introduction and summary

A. Introduction

1. This report covers the technical expert review of the BTR1 of Malawi. The review was organized by the secretariat and conducted by the TERT in accordance with the MPGs,[1] particularly chapter VII thereof. Malawi, on a voluntary basis, requested the secretariat to organize a review of the information reported in the BTR1 pursuant to chapter IV of the MPGs as part of the technical expert review.[2] The outcome of the voluntary review is presented in annex I.

2. A draft version of this report was transmitted on 23 July 2026 to the Government of Malawi, which did not provide any comments.

3. The review was conducted as a centralized review (as a group) from 11 to 15 May 2026 in Kigali by the following team of nominated experts from the UNFCCC roster of experts: Nadia Glaesner (Denmark), Hiroshi Ito (Japan), Sheila Kiconco (Uganda), Sunil Pathak (India), Rania Seif (Egypt), Elke Talma (Seychelles), Maqhanolle David Tsekoa (Lesotho), Iordanis Tzamtzis (Greece), Harry Vreuls (Kingdom of the Netherlands) and Jongikhaya Witi (South Africa). Harry Vreuls and Jongikhaya Witi were the lead reviewers. The review was coordinated by Nalin Srivastava (secretariat).

B. Scope

4. The TERT conducted a technical expert review of the information reported in the BTR1 of Malawi as per the scope of the review defined in paragraph 146 of the MPGs and decision 9/CMA.4, consisting of:

(a) Review of the consistency of the information submitted by the Party under Article 13, paragraphs 7 and 9, of the Paris Agreement with the MPGs taking into account the flexibility accorded to the Party under Article 13, paragraph 2, of the Paris Agreement (see chap. II.A below);

(b) Consideration of the Party's implementation and achievement of its NDC under Article 4 of the Paris Agreement (see chap. II.B below);

(c) Identification of areas of improvement[3] for the Party related to implementation of Article 13 of the Paris Agreement (see chap. II.D below);

(d) Assistance in identifying capacity-building needs (see chap. II.E below);

(e) Voluntary review of the information reported by the Party pursuant to chapter IV of the MPGs (see annex I).

C. Summary

5. Malawi submitted its BTR1 and the annexes to the BTR1 on 9 October 2025 and 21 October 2025 respectively, after the deadline of 31 December 2024 mandated in decision 18/CMA.1. Malawi submitted its NID as a stand-alone document on 9 October 2025, after the deadline. Malawi submitted its CTF NDC tables on 21 October 2025, after the deadline, and CTF support tables on 9 October 2025, after the deadline. The TERT noted the delay in the submissions. The TERT also noted that the Party applied discretion in relation to the timing of its submission in accordance with paragraph 4 of decision 18/CMA.1.

6. The Party submitted information pursuant to Article 6 of the Paris Agreement. The TERT took note of the information on ITMOs provided in the structured summary in the CTF

[1] Decision 18/CMA.1, annex.

[2] See decision 9/CMA.4, para. 1.

[3] As referred to in paras. 7, 8, 146(d) and 162(d) of the MPGs.

tables and since the information reported was not subject to an Article 6 technical expert review, it was not subject to consideration as part of the technical expert review of the Party's BTR1.

7. A list of the areas of improvement identified on the basis of the review of the consistency of the reported information with the MPGs can be found in the assessment tables.[4]

8. The Party applied flexibility as provided for those developing country Parties that need it in the light of their capacities pursuant to Article 13, paragraph 2, of the Paris Agreement in relation to the NIR of anthropogenic GHG emissions by sources and removals by sinks[5] and the information necessary to track progress in implementing and achieving its NDC.[6] Information on where the flexibility was applied is included in chapters II.A.1–II.A.2 below.

D. Information provided by the Party pursuant to paragraphs 143–145 of the modalities, procedures and guidelines

9. Malawi reported information on support needed and received for implementing Article 13 of the Paris Agreement and transparency-related activities, including for transparency-related capacity-building. The Party reported on support needed and received for preparing reports pursuant to Article 13 of the Paris Agreement. Support is needed primarily for applying higher-tier methods from the 2006 IPCC Guidelines for preparing the NIR. Support has been received for establishing or strengthening national capacity to track progress by putting in place a framework for regular data collection with the aim of managing and tracking the implementation of the Party's NDCs and the preparation of the BTR1. Table 1 summarizes the information that Malawi reported in CTF tables III.12–III.13 on support needed and received. The TERT noted that the above-mentioned information reported by the Party is not subject to review as per the scope of the review defined in paragraph 146 of the MPGs.

Table 1
Summary of support needed and received by Malawi for implementing Article 13 of the Paris Agreement and transparency-related activities, including for transparency-related capacity-building
(USD million)

Status of support[a]	*Amount*
Support needed[b]	–
Support received	1.889

Sources: Malawi's BTR1 and CTF tables III.12–III.13.
[a] The Party did not specify the time frame for support needed or received.
[b] The Party did not quantify the amount of support needed.

[4] Contained in document FCCC/ETF/TERR.1/2025/MWI/Add.1, available at https://unfccc.int/first-biennial-transparency-reports.
[5] The developing country Party applied flexibility in the light of its capacities with respect to the provisions in paras. 48 and 57 of the MPGs.
[6] The developing country Party applied flexibility in the light of its capacities with respect to the provision in para. 102 of the MPGs.

II. Technical expert review[7]

A. Review of the consistency of the submitted information with the modalities, procedures and guidelines[8]

1. National inventory report[9]

10. The TERT assessed the information reported in the BTR1 of Malawi and identified areas of improvement relating to consistency with the MPGs, which are described in tables 2–7 of the assessment tables referred to in paragraph 7 above and summarized in table 2.

[7] As per para. 187 of the MPGs.
[8] As per para. 146(a) of the MPGs.
[9] As per para. 150(a) of the MPGs.

Table 2
Information reported in Malawi's national inventory report and review of consistency with the modalities, procedures and guidelines

Element	*Information to be reported*	*Response and summary as relevant*	*ID#(s) for the area(s) of improvement identified*[a]
Submission type (para. 12 of the MPGs)	Has the NIR been submitted as a stand-alone document?	Yes	No areas of improvement relating to recommendations were identified
Time series (paras. 57–58 of the MPGs)	What years have been reported and is the time series in accordance with the MPGs?[b]	1994–2022 for energy, IPPU, agriculture and waste, and 2018–2022 for LULUCF, not in accordance with the MPGs	2.G.1
Metrics (para. 37 of the MPGs)	Has the Party used the 100-year global warming potential values from the AR5?	Yes	No areas of improvement relating to recommendations were identified
	Has the Party used other metrics?	No	No areas of improvement relating to recommendations were identified
Gases (paras. 48–49 of the MPGs)	Which gases have been reported?[b]	CO_2, CH_4, N_2O	No areas of improvement relating to recommendations were identified
Indirect emissions (para. 52 of the MPGs)	Has the Party reported indirect CO_2 emissions and national totals with and without indirect CO_2?	No	No areas of improvement relating to recommendations were identified
	Has the Party reported indirect N_2O emissions from sources other than those in the agriculture and LULUCF sectors as a memo item?	No	NA
National circumstances and institutional arrangements (paras. 18–19 of the MPGs)	Has the Party reported information on the functions related to inventory planning, preparation and management?	Partly	2.G.3
Methodologies, parameters and data (paras. 20–24 of the MPGs)	Has the Party used the 2006 IPCC Guidelines?	Partly	3.E.6, 4.I.1, 5.A.2, 6.L.2, 6.L.3, 6.L.4, 6.L.5
	Has the Party used other IPCC methodological guidance?	Yes, the *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*	No areas of improvement relating to recommendations were identified
Key category analysis (paras. 25, 41 and 42 of the MPGs)	Has the Party reported a key category analysis?	Partly, a key category analysis was performed using approach 1 and a 95 per cent threshold for level and trend	2.G.5

Element	*Information to be reported*	*Response and summary as relevant*	*ID#(s) for the area(s) of improvement identified*[a]
		assessment for 2018 and the latest reporting year (2022) and with and without LULUCF	
Time-series consistency and recalculations (paras. 26–28, 43 and 57 of the MPGs)	Has the Party reported a consistent time series?	No	2.G.1
	Has the Party reported recalculations and provided justification and explanatory information for them?	Yes, in relation to its 2022 biennial update report submission under the Convention	NA
Uncertainty assessment (paras. 29 and 44 of the MPGs)	Has the Party reported the results of the uncertainty analysis and the methods used, underlying assumptions and trends?	Only qualitatively reported and discussed	2.G.6
QA/QC plan and procedures (paras. 34–36 and 46 of the MPGs)	Has the Party elaborated information on an inventory QA/QC plan, including information on the inventory agency responsible for implementing QA/QC, and current and future QA/QC procedures?	Partly, including information on the inventory agency responsible for coordinating QA/QC activities	2.G.8
Assessment of completeness (paras. 30–33, 45, 47 and 50 of the MPGs)	Have any areas of improvement for lack of completeness been identified for the following sectors?	Yes	2.G.9
	Energy	Yes	3.E.2, 3.E.5, 3.E.7
	IPPU	No	No areas of improvement relating to recommendations were identified
	Agriculture	Yes	5.A.1, 5.A.4
	LULUCF	Yes	6.L.6
	Waste	No	No areas of improvement relating to recommendations were identified
Threshold for reporting significant categories (para. 32 of the MPGs)	Are the estimated emissions for all categories and in total for all gases and categories reported insignificant below the relevant thresholds?	Yes	No areas of improvement relating to recommendations were identified
	For categories reported as “NE” owing to insignificance, has information been reported showing that the likely level of	Yes	NA

Element	*Information to be reported*	*Response and summary as relevant*	*ID#(s) for the area(s) of improvement identified*[a]
	emissions is below the threshold of significance?		
Methodologies, EFs, parameters and AD (paras. 39, 40 and 53–56 of the MPGs)	Has information been transparently reported on categories, gases, methodologies (including the rationale for selecting them), EFs and AD at a disaggregated level for the following sectors?	Partly	2.G.4
	Energy	Partly	3.E.3
	Has information been reported on international aviation and marine bunker fuel emissions as two separate entries and such emissions distinctly reported from national totals?	Partly	NA
	Has information been reported indicating how feedstocks and non-energy use of fuels have been accounted for in the inventory, under the energy or IPPU sector?	No	NA
	IPPU	Partly	4.I.1
	Agriculture	Partly	5.A.3
	LULUCF	Partly	6.L.1
	Did the Party provide supplementary information on the approach to reporting emissions and removals from harvested wood products in accordance with IPCC guidance other than the production approach, and provide supplementary information on emissions and removals from harvested wood products estimated using the production approach?	No	6.L.7
	Waste	Partly	7.W.1, 7.W.2

[a] See document FCCC/ETF/TERR.1/2025/MWI/Add.1. The areas of improvement referred to in this table comprise only those relating to recommendations in that document.
[b] The developing country Party applied flexibility in the light of its capacities with respect to this provision.

2. Information necessary to track progress in implementing and achieving the nationally determined contribution[10]

11. The TERT assessed the information reported in the BTR1 of Malawi and identified areas of improvement relating to consistency with the MPGs, which are described in tables 10, 11 and 13 of the assessment tables referred to in paragraph 7 above and summarized in table 3.

Table 3
Information reported in Malawi's submission

Topic	*ID#(s) for the area(s) of improvement identified*[a]
National circumstances and institutional arrangements (paras. 59–63 of the MPGs)	No areas of improvement relating to recommendations were identified
Description of the NDC under Article 4 of the Paris Agreement, including updates (para. 64 of the MPGs)	No areas of improvement relating to recommendations were identified
Information necessary to track progress in implementing and achieving the NDC under Article 4 of the Paris Agreement (paras. 65–79 of the MPGs)	10.1, 10.2, 10.3
Mitigation PaMs, actions and plans related to implementing and achieving the NDC under Article 4 of the Paris Agreement (paras. 80–90 of the MPGs)	11.1, 11.2, 11.4
Summary of GHG emissions and removals (para. 91 of the MPGs)	No areas of improvement relating to recommendations were identified
Projections of GHG emissions and removals[b] (paras. 92–102 of the MPGs)	13.1

[a] See document FCCC/ETF/TERR.1/2025/MWI/Add.1. The areas of improvement referred to in this table comprise only those relating to recommendations in that document.
[b] The developing country Party applied flexibility in the light of its capacities with respect to this provision.

3. Financial, technology development and transfer, and capacity-building support provided[11]

12. Malawi does not consider itself subject to the reporting obligations applicable to developed country Parties pursuant to Article 13, paragraph 9, of the Paris Agreement. Accordingly, the Party did not provide information on financial, technology development and transfer, or capacity-building support provided to developing country Parties under Articles 9–11 of the Paris Agreement in its BTR1.[12]

B. Consideration of the Party's implementation and achievement of its nationally determined contribution[13]

13. In considering Malawi's progress in implementing and achieving its NDC, the TERT noted that the NDC[14] is defined as an economy-wide reduction of GHG emissions excluding LULUCF compared with a 'business as usual' scenario. The NDC comprises an unconditional component to be implemented using domestic financial resources (a GHG emission reduction of 6 per cent (equivalent to 2.05 Mt CO_2 eq) in 2040 relative to the 'business as usual' scenario (34.61 Mt CO_2 eq)) and a conditional component subject to the provision of financial support (an additional GHG emission reduction of 45 per cent (equivalent to 15.64 Mt CO_2 eq) in 2040 relative to the 'business as usual' scenario), yielding

[10] As per para. 150(b) of the MPGs.
[11] As per para. 150(c) of the MPGs.
[12] As per para. 118 of the MPGs.
[13] As per para. 146(b) of the MPGs.
[14] The consideration of the Party's implementation and achievement of its NDC is in the context of the updated NDC submitted by Malawi on 30 July 2021.

a total contribution of a 51 per cent (17.69 Mt CO_2 eq) reduction in GHG emissions in the target year (2040) relative to the 'business as usual' scenario, starting from a base-year emission level of 9.33 Mt CO_2 eq in 2017. The GHGs included in the NDC target are CO_2, CH_4 and N_2O. For the NDC, the Party applied 100-year global warming potential values from the AR5 and methodologies from the 2006 IPCC Guidelines to estimate emissions and removals.

14. The indicator that Malawi selected to track progress in implementing and achieving its NDC is described in table 4.

Table 4
Description of the indicator(s) selected by Malawi to track progress in implementing and achieving its nationally determined contribution

NDC target	*Indicator*	*Description*
Reduction of 51 per cent in economy-wide GHG emissions in 2040 relative to the 'business as usual' scenario (comprising 6 per cent unconditional and 45 per cent conditional contributions)	Absolute GHG emissions excluding LULUCF, reported as the absolute difference between 'business as usual' emissions and the actual emissions (i.e. absolute reduction in GHG emissions excluding LULUCF relative to the 'business as usual' scenario) reported for each reporting year (kt CO_2 eq)	Indicator comprises a reduction in economy-wide GHG emissions excluding LULUCF relative to the 'business as usual' scenario. The GHGs included in the NDC target are CO_2, CH_4 and N_2O. The Party applied 100-year global warming potential values from the AR5 and methodologies from the 2006 IPCC Guidelines to estimate emissions and removals

Sources: Malawi's BTR1 and CTF tables 1–3.

15. The TERT noted that the contribution of LULUCF to achieving the NDC is not included in the Party's baseline scenario or target-year level and that although Malawi participated in cooperative approaches under Article 6, paragraph 2, of the Paris Agreement during the reporting period (2021–2040), the ITMOs issued under a project[15] have been authorized and first transferred for use for other international mitigation purposes and were not used towards the achievement of the Party's NDC; the corresponding adjustments and emission balance were reported in CTF table 4. The information on ITMOs provided in the structured summary was not subject to consideration as part of the technical expert review of the Party's BTR1 (see para. 6 above).

16. Table 5 summarizes information on progress in implementing the NDC based on the indicator absolute GHG emissions excluding LULUCF taking into account the type of Malawi's NDC target, including quantitative values for the baseline scenario for each reporting year, including the most recent year available (2022) and target year (2040).

Table 5
Summary of information on Malawi's progress in implementing and achieving its nationally determined contribution based on reductions in absolute greenhouse gas emissions excluding land use, land-use change and forestry relative to the 'business as usual' scenario
(kt CO_2 eq)

	Absolute GHG emissions excluding LULUCF	*Contribution of LULUCF, as applicable*	*ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable*	*Indicator adjusted for contribution of LULUCF and ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable*
Baseline (2040)[a]	34 610.00			

[15] Carbon credits were issued under Gold Standard project GS11677 (improved biomass cookstoves) and first transferred to Hestian Innovation Limited in the amounts of 989,219 t CO_2 eq in 2021, 563,536 t CO_2 eq in 2022, 207,295 t CO_2 eq in 2023 and 18,425 t CO_2 eq in 2024 (a cumulative amount of 1,778,475 t CO_2 eq).

	Absolute GHG emissions excluding LULUCF	*Contribution of LULUCF, as applicable*	*ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable*	*Indicator adjusted for contribution of LULUCF and ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable*
Baseline (2022)[a]	12 418.00			
2021	24 129.70			
2022	25 261.32			
Reduction relative to the 'business as usual' scenario (2021)	–12 565.70[c]	NA	NA[d]	–12 565.70
Reduction relative to the 'business as usual' scenario (2022)	–12 843.32[c]	NA	NA[d]	–12 843.32
Target level of reductions in absolute GHG emissions excluding LULUCF relative to the 'business as usual' scenario (2040)[b]				2 050.00

Sources: Malawi's BTR1 and CTF table 4.
[a] Emission levels corresponding to the baseline scenario are based on the GHG projections under the WOM scenario.
[b] Target level corresponds to an unconditional NDC target.
[c] A negative value corresponds to GHG emissions in the reporting period being above the 'business as usual' level.
[d] See para. 6 above.

17. According to the most recent information on the reduction in absolute GHG emissions excluding LULUCF relative to the 'business as usual' scenario provided in the BTR1 and CTF table 4, in 2022 Malawi's reduction in absolute GHG emissions excluding LULUCF relative to the 'business as usual' scenario was –12 843.32 kt CO_2 eq, corresponding to GHG emissions being 103.4 per cent above the 'business as usual' scenario in 2022 (12,418.00 kt CO_2 eq), 49.3 per cent below the emission level corresponding to the unconditional target level in 2040 (32,560.00 kt CO_2 eq) and 22.4 per cent above the emission level corresponding to the conditional target level in 2040 (16,920.00 kt CO_2 eq).

18. Malawi reported information on the actions and PaMs that support the implementation and achievement of its NDC, prioritizing the reporting of mitigation measures in the BTR1 according to data availability, key category coverage and emission reduction potential. Table 6 provides a summary of the reported information on the key PaMs of Malawi.

Table 6
Summary of information on key policies and measures reported by Malawi

Sector	*Key PaMs*[a]	*Estimate of expected GHG emission reductions in 2030 (kt CO_2 eq)*	*Estimate of expected GHG emission reductions in 2040 (kt CO_2 eq)*
Energy			
Energy efficiency	Improved biomass cookstoves (charcoal and firewood)	4 590.91	NE
Energy supply and renewables	Grid-connected hydropower generation	NE	2 253.39
	Off-grid small-scale solar PV systems	719.07	281.71
	Grid-connected large-scale solar PV	NE	NE
Transport	Modal shift: private to passenger transport	NE	NE
IPPU	Increased use of rice husk ash in blended cement	NE	NE

Sector	*Key PaMs*[a]	*Estimate of expected GHG emission reductions in 2030 (kt CO_2 eq)*	*Estimate of expected GHG emission reductions in 2040 (kt CO_2 eq)*
Agriculture	Conservation agriculture: crop residue and rotation	NE	NE
	Promotion of efficient fertilizer use and manure management	NE	NE
LULUCF	Afforestation (protective forests, woodlots and urban forests)	NE	NE
	Sustainable forest and landscape management	NE	NE
Waste	Landfill gas utilization	NE	NE

Sources: Malawi's BTR1 and CTF table 5.
[a] Names of PaMs reproduced as reported in Malawi's BTR1.

19. The TERT noted that PaMs, actions and plans have started to have an impact, albeit a limited one, on GHG emission reductions in the energy sector. In the energy sector, mitigation PaMs have focused on, inter alia, promoting grid-connected hydropower generation and off-grid small-scale solar PV systems; the main contributors to emission reductions have been deploying grid-connected large-scale solar PV, with 141 MW installed capacity in 2021–2024, and improved biomass cookstoves, with achieved GHG emission reductions of 2,267.42 kt CO_2 eq in 2021 and 2,312.00 kt CO_2 eq in 2022. However, on an economy-wide basis, GHG emissions excluding LULUCF increased from 24,129.70 kt CO_2 eq in 2021 to 25,261.32 kt CO_2 eq in 2022, an increase of 4.7 per cent, with the waste sector accounting for 71.5 per cent of total emissions excluding LULUCF in 2022. The TERT noted that population growth, increasing demand for waste management services and continuing reliance on biomass for cooking are key national circumstances driving emission trends over time.

20. Malawi reported projections for 2030, 2035 and 2040 under the WM scenario.[16] The WM scenario reported by the Party represents the unconditional NDC component and includes PaMs implemented and adopted until 2022. In addition to the WM scenario, Malawi reported the WAM (including all PaMs associated with both the conditional and unconditional components of the NDC) and WOM scenarios. The projected emission levels are presented in table 7. The TERT noted that information on GHG emission projections was used in considering Malawi's progress in implementing its NDC given that the NDC is a below 'business as usual' scenario target and the 'business as usual' baseline for 2040 corresponds to the Party's reported WOM projection for that year.

Table 7
Summary of greenhouse gas emission projections for Malawi

	GHG emissions (kt CO_2 eq/year)	*Change in relation to 2020 level (%)*	*Change in relation to 2022 level (%)*
Inventory data 2020	23 300.35		
Inventory data 2022	25 261.32	8.4	
WOM projections for 2030	19 250.00	–17.4	–23.8
WM projections for 2030	18 070.00	–22.4	–28.5
WAM projections for 2030	12 780.00	–45.2	–49.4
WOM projections for 2040	34 610.00	48.5	37.0
WM projections for 2040	32 560.00	39.7	28.9
WAM projections for 2040	16 920.00	–27.4	–33.0

Sources: Malawi's BTR1 and information provided by the Party during the review.

[16] Note that, as per para. 93 of the MPGs, projections shall not be used to assess progress towards the implementation and achievement of an NDC under Article 4 of the Paris Agreement unless the Party has identified a reported projection as its baseline.

Note: The projections are for GHG emissions without LULUCF and excluding indirect CO_2 emissions.

21. The TERT noted that, under the WOM scenario that corresponds to the baseline scenario, GHG emissions would be expected to increase by 37.0 per cent in 2022–2040. In the WM scenario, which includes only the PaMs associated with the unconditional component of the NDC, GHG emissions would be expected to increase by 28.9 per cent in 2022–2040. Under the WAM scenario, which encompasses all PaMs associated with the conditional and unconditional components of the NDC, GHG emissions would be expected to decrease by 33.0 per cent in 2022–2040.

22. The TERT assessed Malawi's progress towards its NDC target for 2021–2022. The TERT considers that, on the basis of a comparison of information on the reduction in absolute GHG emissions excluding LULUCF relative to the 'business as usual' scenario in the most recent reported year (i.e. 2022) with the unconditional target level for 2040 and taking into account information on mitigation actions, baseline projections and relevant national circumstances, Malawi did not make progress towards achieving its NDC target by implementing mitigation actions in 2021–2022. As such, the TERT considers that it may face challenges keeping on track to achieving its NDC target, noting that absolute GHG emissions excluding LULUCF are 103.4 per cent above the 'business as usual' baseline in 2022 (12,418.00 kt CO_2) and 49.3 per cent below the unconditional target level for 2040 (32,560.00 kt CO_2 eq) and 22.4 per cent above the emission level corresponding to the conditional target level in 2040 (16,920.00 kt CO_2 eq). The TERT further notes the revision of estimates between the GHG inventory used in the construction of the NDC baseline and the most recent GHG inventory (see ID# 10.1 in table 10 of document FCCC/ETF/TERR.1/2025/MWI/Add.1). The TERT also notes that there are not yet enough data to sufficiently assess the Party's progress in implementing its NDC, as data are available for only two years (2021 and 2022) of the implementation period (2017–2040).

C. Consideration of the Party's support provided[17]

23. Malawi does not consider itself subject to the reporting obligations applicable to developed country Parties pursuant to Article 13, paragraph 9, of the Paris Agreement and did not report information in its BTR1 on financial, technology transfer and development, and capacity-building support provided to developing country Parties under Articles 9–11 of the Paris Agreement (see para. 12 above).

D. Identification of areas of improvement[18]

24. During the technical expert review, the TERT identified areas of improvement in relation to Malawi's implementation of Article 13 of the Paris Agreement, which are summarized in chapter II.A above and included in the assessment tables referred to in paragraph 7 above.

E. Assistance in identifying capacity-building needs[19]

25. The TERT, in consultation with Malawi, identified the following prioritized needs for capacity-building to facilitate the Party's reporting in its BTR relating to the flexibilities applied by it as per the MPGs:[20]

(a) Strengthening technical capacity to use splicing techniques for filling data gaps to enable the reporting of a complete GHG inventory time series, as required under the MPGs (para. 57);

[17] As per para. 146(c) of the MPGs.
[18] As per para. 146(d) of the MPGs.
[19] As per para. 146(e) of the MPGs.
[20] For a complete list of the capacity-building needs identified by the TERT in consultation with the Party, see table 15 in document FCCC/ETF/TERR.1/2025/MWI/Add.1.

(b) Strengthening technical capacity to perform modelling and ensuring enhanced access to analytical tools and modelling expertise to develop future sector-level (including with LULUCF projections) and gas-level projections, specifically in relation to analysing the impacts of PaMs for the WM and WAM scenarios.

26. Furthermore, in order to facilitate continuous improvement in reporting, the following additional capacity-building needs were identified during the review:

(a) Strengthening technical capacity to understand and apply the reporting requirements of the MPGs;

(b) Strengthening technical capacity to use the reporting tools for the enhanced transparency framework under the Paris Agreement to report information in CRTs and CTF tables;

(c) Developing procedural arrangements for the sustainable compilation of the GHG inventory, including for elaborating a QA/QC plan;

(d) Enhancing technical capacity to understand and apply the 2006 IPCC Guidelines;

(e) Enhancing technical capacity to conduct a quantitative and qualitative key category analysis, including the identification of significant subcategories and carbon pools within key categories;

(f) Enhancing technical capacity to use the IPCC inventory software to estimate emissions and removals for all GHG inventory sectors;

(g) Strengthening technical capacity to collect and derive uncertainty data for AD and EFs;

(h) Strengthening technical and institutional capacity for data collection to support the estimation of emissions using the reference and sectoral approaches for the energy sector and estimating CO_2 emissions at a disaggregated level for stationary and mobile combustion;

(i) Strengthening technical capacity to collect and prepare the data required for applying a higher-tier methodology for estimating CO_2 emissions for the energy sector;

(j) Strengthening technical capacity to acquire and develop disaggregated AD for all nitrogen input to soils;

(k) Strengthening technical capacity to collect data on annual land-use and land-use change areas and developing a consistent time series for land representation;

(l) Strengthening technical capacity to apply methodologies for the stock difference method for estimating carbon stock changes in living biomass;

(m) Establishing a data-collection and information management system for obtaining and managing data on waste streams;

(n) Strengthening technical capacity to assess co-benefits of actions and PaMs;

(o) Strengthening technical capacity to apply methodologies and models to assess estimates of expected and achieved GHG emission reductions associated with the Party's reported actions and PaMs.

27. Malawi also identified the capacity-building support needs in its NID (chap. 10).

III. Conclusions and recommendations

28. The TERT conducted a technical expert review of the information reported in the BTR1, NID and CTF tables of Malawi in accordance with the MPGs.

29. The areas of improvement identified by the TERT on the basis of the review of the consistency of the information reported by Malawi with the MPGs are summarized in chapter II.A above and included in the assessment tables referred to in paragraph 7 above.

30. The TERT considers that, on the basis of a comparison of information on reductions in absolute GHG emissions excluding LULUCF relative to the 'business as usual' scenario for the most recent reported year (i.e. 2022) with the unconditional target level in 2040, and taking into account information on mitigation actions, baseline projections and relevant national circumstances, Malawi did not make progress towards achieving its NDC target by implementing mitigation actions in 2021–2022. As such, the TERT considers that it may face challenges keeping on track to achieving its NDC target. The TERT also notes that there are not yet enough data to sufficiently assess the Party's progress in implementing its NDC, as data are available for only two years (2021 and 2022) of the implementation period (2017–2040).

31. The TERT notes that PaMs, actions and plans have started to have an impact, albeit a limited one, on GHG emission reductions in the energy sector. In the energy sector, mitigation PaMs have focused on, inter alia, promoting grid-connected hydropower generation and off-grid small-scale solar PV systems, with the main contributors to emission reductions being the deployment of grid-connected large-scale solar PV, with 141 MW installed capacity in 2021–2024, and improved biomass cookstoves, with achieved GHG emission reductions of approximately 2,270.00 kt CO_2 eq in 2021 and 2,310.00 kt CO_2 eq in 2022. However, on an economy-wide basis, GHG emissions excluding LULUCF increased from 24,129.70 kt CO_2 eq in 2021 to 25,261.32 kt CO_2 eq in 2022, an increase of 4.7 per cent, with the waste sector accounting for 71.5 per cent of total emissions excluding LULUCF in 2022. The TERT noted that population growth, increasing demand for waste management services and continuing reliance on biomass for cooking are key national circumstances driving emission trends over time.

32. Malawi does not consider itself subject to the reporting obligations applicable to developed country Parties pursuant to Article 13, paragraph 9, of the Paris Agreement and, in accordance with the MPGs, did not report information on financial, technology development and transfer, or capacity-building support provided to developing country Parties under Articles 9–11 of the Paris Agreement in its BTR1.

33. Regarding the implementation of Article 13 of the Paris Agreement and transparency-related activities, Malawi required support for enhanced use of the 2006 IPCC Guidelines. The amount of support received through various channels totalled USD 1.889 million.

34. In consultation with Malawi, the TERT identified reporting-related needs for capacity-building support relating to the flexibilities applied by the Party as per the MPGs that could facilitate the Party's preparation of subsequent BTRs. For Malawi, the main reporting-related needs for capacity-building support are related to understanding and applying the reporting requirements of the MPGs; reporting information in CRTs and CTF tables; using splicing techniques for filling data gaps with a view to reporting the complete GHG inventory time series; and further improving its understanding of and ability to apply the 2006 IPCC Guidelines.

Annex I

Outcome of the review conducted on a voluntary basis of the information reported by the Party in its first biennial transparency report pursuant to chapter IV of the modalities, procedures and guidelines

I. Summary of reported information

1. In its BTR1 Malawi provided information related to climate change impacts and adaptation under Article 7 of the Paris Agreement pursuant to chapter IV of the MPGs and, as per paragraph 1 of decision 9/CMA.4, on a voluntary basis, requested the secretariat to organize a review of that information as part of the technical expert review pursuant to chapter VII of the MPGs.

2. In accordance with chapter IV of the MPGs, Malawi provided information on its climate change impacts; risks and vulnerabilities; adaptation priorities and barriers to implementing adaptation action; and cooperation, good practices, experience and lessons learned in relation to climate change impacts and adaptation, which is summarized in table I.1.

Table I.1
Summary of information on vulnerability and adaptation to climate change reported by the Party

Priority adaptation sector or area	*Vulnerability and adaptation measures reported*	*Challenges and constraints*	*Cooperation, good practices, experience and lessons learned*
Energy	Vulnerability: Malawi generates electricity using hydropower on the Shire River, meaning that the energy sector is highly exposed to the variability of fluctuating water levels due to droughts and floods and power production is directly affected Adaptation measure: Diversifying the energy mix through energy generation involving solar and wind power, agricultural biomass and geothermal sources	Heavy reliance on biomass fuel, high costs of renewable technologies, inadequate financing for electricity generation projects, limited institutional capacity to undertake adaptation measures, poor infrastructure	The Malawi Electricity Access Project, a public–private partnership funded by the World Bank, is aimed at constructing hydropower facilities to facilitate off-grid solar expansion and the trading of excess electricity through the Southern African Power Pool. Key investments include the Mpatamanga Hydropower Storage Project and the rehabilitation of the Kapichira hydropower plant
Fisheries	Vulnerability: Decline in fish stocks owing to changes in fish habitats, changes in water levels due to rising temperatures and increased incidence of fish diseases and habitat degradation due to increased erosion from rainfall Adaptation measures: Implementing ecosystem-based approaches to fisheries management, enforcing closed fishing seasons and demarcating no fishing zones, promoting the protection of breeding and nursery habitats (e.g. wetlands, sanctuaries and deep pools as refuge areas for juvenile fish) and converting aquatic food by-products into	Constraints in implementing adaptation measures, including financial constraints, inadequate awareness and knowledge of ecosystem-based approaches to fisheries management, weak policy and governance framework, infrastructure limitations and data gaps	Digital climate information and advisory services system, developed with the support of the United Nations Development Programme, provides real-time data on weather conditions (wind speed, wave height, temperature) and water quality parameters for Lake Malawi Integrated aquaculture–agriculture combines fish farming with crop irrigation to optimize water use and enhance food security in some selected irrigation dams in the country

Priority adaptation sector or area	*Vulnerability and adaptation measures reported*	*Challenges and constraints*	*Cooperation, good practices, experience and lessons learned*
	value added products such as fish powder		
Food and agriculture[a]	Vulnerability: Droughts, floods, variable rainfall, declines in crop yield, livestock diseases and extreme weather events severely impact agricultural production and food security Adaptation measures: Diversifying crops; using more resilient crop varieties; implementing conservation agriculture, enhanced irrigation systems, integrated pest and disease management and soil fertility management; and establishing early warning systems, climate information services and crop insurance schemes	Limited climate awareness among farmers, poor access to seeds for more resilient crops, persistent dry spells, droughts, floods, pests, strong winds, hailstorms and post-harvest losses	Farmer field schools and the lead farmer approach effectively disseminate climate-smart agriculture Weather-indexed crop insurance supports smallholder resilience Soybean–maize intercropping improves soil fertility
Health[a]	Vulnerability: Increased incidence of climate-sensitive diseases, including malaria, diarrhoeal diseases and malnutrition, linked to temperature and rainfall variability Adaptation measures: Promoting use of long-lasting insecticide-treated mosquito nets, filtration and chlorination of drinking water to control cholera and improvements in personal hygiene; implementing malaria vaccine programme; adopting biofortified crops; and establishing social safety nets to address malnutrition	Limited infrastructure and funding for health, high disease burden (e.g. human immunodeficiency virus/ acquired immunodeficiency syndrome, malaria and tuberculosis) and poor intergovernmental coordination	Data analysis of the impact of climate change on the health sector for four climate-sensitive diseases in Malawi (malaria, diarrhoea, malnutrition and depression) supports evidence-based adaptation planning Malawi has adopted the Integrated Disease Surveillance and Response system for early detection of and response to priority diseases
Infrastructure and human settlements[a]	Vulnerability: Damage to infrastructure due to floods, soil erosion, landslides and increased wind speed, challenges in water resource management, and heat stress on infrastructure Adaptation measures: Implementing design modifications, including improved drainage systems, stronger bridge foundations and use of more weather-resistant materials, and improving early warning systems and establishing better maintenance practices for infrastructure	Financial constraints, poor maintenance practices, technical capacity gaps, data limitations, lack of institutional coordination among different government agencies	Dyke construction in flood-prone areas, using stiffer binders as heat-resistant paving materials and building retaining walls in areas prone to landslides
Water[a]	Vulnerability: Droughts, floods, declining rainfall, rising temperatures and reduced groundwater recharge Adaptation measures: Constructing dams, improving early warning systems, delineating flood-prone areas and promoting coordinated	Limited financial resources, shortage of trained technical personnel and engineers, inadequate infrastructure, poor water resource management practices, unreliable weather data and increasing frequency and intensity of extreme	Coordinated use of surface water and groundwater and integrating Indigenous knowledge with scientific early warning systems have been recognized as effective climate adaptation strategies

Priority adaptation sector or area	*Vulnerability and adaptation measures reported*	*Challenges and constraints*	*Cooperation, good practices, experience and lessons learned*
	use of surface water and groundwater	weather events such as floods, droughts and strong winds	

[a] Thematic target under the United Arab Emirates Framework for Global Climate Resilience.

3. Malawi provided a description of its adaptation strategies, policies, plans and goals; the actions it has taken to integrate adaptation into national policies and strategies; its progress in implementing adaptation action, and information on its monitoring and evaluation of adaptation actions and processes, which is summarized within the context of the iterative adaptation cycle in table I.2.

Table I.2
Summary of information on the iterative adaptation cycle reported by the Party

Dimension	*Information on progress reported*
Impact, vulnerability and risk assessment	Malawi provided vulnerability and risk assessments across multiple sectors such as agriculture, water, fisheries, health, infrastructure, forestry, tourism, wildlife and energy. Under the assessment process, historical climate trends in 1960–2019 were analysed and future climate scenarios were developed using different global climate models and shared socioeconomic pathways, showing increasing temperatures, erratic rainfall patterns, droughts, floods and rising climate variability. The findings show that agriculture remains highly vulnerable owing to declining crop yields and rainfall variability, while water resources face increasing stress from changing hydrological balances and fluctuating water levels in lakes. Health assessments linked climate variability to increased incidences of malaria, diarrhoea, malnutrition, hypertension and depression. Infrastructure, energy systems, forests and biodiversity were also identified as highly exposed to extreme weather events and ecosystem degradation.
Planning	Malawi has developed a robust multi-level policy framework for climate adaptation. Key frameworks include the National Adaptation Programme of Action, the National Climate Change Management Policy, the National Resilience Strategy, the National Adaptation Plan Framework, the NDCs and Malawi 2063, the Party's long-term development plan, which prioritize climate action as a key driver for mainstreaming climate resilience into national development planning.
Implementation	Malawi reported significant progress in implementing adaptation actions. Implemented adaptation actions include integrating local Indigenous knowledge systems and practices with scientific forecasting and early warning systems, planting drought-tolerant crops and early maturing varieties, restoring degraded landscapes through natural regeneration management in forest reserves, identifying target areas for conservation agriculture, and adopting the national drought plan and updating it to include the identification of priority drought-response investments.
Monitoring, evaluation and learning	Monitoring and evaluation is a core component of the adaptation cycle, anchored in a multi-level institutional framework aligned with national planning structures. The responsibilities for monitoring and evaluation are shared across three levels of government: the national level, through the Ministry of Finance, Economic Planning and Development and the Environmental Affairs Department, which serves as the focal point for all climate change activities; the district level, through the Director of Planning and the District Executive Committee; and the community level, through area development committees and village natural resource management committees. However, despite this institutional structure being in place, Malawi's monitoring and evaluation system remains underdeveloped in practice, lacking detailed methodologies, standardized indicators for measuring adaptation outcomes and a functioning system-wide framework for consistently tracking and reporting progress across all sectors.

4. Malawi provided information on averting, minimizing and addressing loss and damage related to climate change impacts, as summarized in table I.3.

Table I.3
Summary of information related to averting, minimizing and addressing loss and damage reported by the Party

Dimension	*Information reported*
Observed and potential climate change impacts	Extreme events: Floods, tropical cyclones and strong winds, and rising water levels in lakes.
	Observed impacts: Floods following the highest recorded rainfall in January 2015; El Niño drought severely disrupted agricultural production in 2016; and tropical cyclones and strong winds cause agricultural losses, economic damage, rising water levels in lakes and disruption to power supply.
	Potential impacts: Malawi's climate projections indicate that temperatures will increase by 1.3–2.6 °C by mid-century and by 2.5–4.2 °C by the end of the century. Rainfall is projected to become more erratic. El Niño conditions are expected to increase the frequency and intensity of floods and strong winds.
	Slow onset events: Long-term temperature increase, land degradation and desertification, growing health burden.
	Observed impacts: Average temperature increase of 0.9 °C observed in 1960–2006 has progressively increased the frequency of hot days (by 30.5 days/year) and hot nights (by 41 days/year) in the same period. Land degradation and desertification owing to soil erosion and unsustainable land management resulted in an estimated loss of 0.6–1.0 per cent of forest cover over the same period. The gradual increase in temperatures is driving a long-term rise in malaria transmission, incidence of diarrhoeal disease, and malnutrition, contributing to a growing health and economic burden that has not yet been fully quantified.
	Potential impacts: In the long term, temperature is expected to rise by 1.2–4.0 °C depending on the emissions scenario; maize and rice yields are projected to decline progressively across most growing areas, representing a long-term irreversible loss of food production capacity; and groundwater recharge is projected to decline as rainfall decreases and evapotranspiration increases, threatening rural water security.
Activities	Malawi has implemented a range of activities aimed at averting, minimizing and addressing loss and damage, including the Catastrophe Deferred Drawdown Option, the Contingency Emergency Response Project, the Malawi Resilience and Disaster Risk Management Project for infrastructure rehabilitation, the Regional Climate Resilience Program for Eastern and Southern Africa, the Malawi Drought Recovery and Resilience Project, which includes flood recovery, the Malawi Watershed Services Improvement Project for watershed restoration, the Social Cash Transfer Programme with climate risk financing, dyke construction in flood-prone districts, and expansion of hydrometeorological monitoring networks.
Institutional arrangements	The Department of Disaster Management Affairs serves as the lead institution for loss and damage coordination and collaborates closely with government ministries, departments and agencies, non-governmental organizations and local communities. As explained during the review, the Ministry of Finance, Economic Planning and Development oversees monitoring at the national level and evaluation of disaster-related projects, and institutional arrangements for other adaptation activities are coordinated by the Environmental Affairs Department in close collaboration with sectoral ministries, departments and agencies and guided by the National Climate Change Management Policy.

II. Areas of improvement identified during the technical expert review of the reporting in the Party's first biennial transparency report on climate change impacts and adaptation under Article 7 of the Paris Agreement pursuant to chapter IV of the modalities, procedures and guidelines

5. The TERT assessed the information reported on climate change impacts and adaptation under Article 7 of the Paris Agreement pursuant to chapter IV of the MPGs in the BTR1 of Malawi and identified areas of improvement relating to consistency with the MPGs,

which are described in table I.4. All encouragements contained in the table are for the next BTR, unless otherwise specified.

Table I.4
Areas of improvement of the reporting on climate change impacts and adaptation under Article 7 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with encouragement*
I.4.1	Specified in paragraph 106 of the MPGs	Malawi did not provide sufficient information on national circumstances relevant to its adaptation actions, including biogeophysical characteristics, demographics, economy, infrastructure and information on adaptive capacity; institutional arrangements and governance, including for assessing impacts, addressing climate change at the sectoral level, decision-making, planning, coordination, addressing cross-cutting issues, adjusting priorities and activities, consultation, participation, implementation, data governance, monitoring and evaluation, and reporting; and legal and policy frameworks and regulations. The TERT noted that the above-mentioned elements were briefly mentioned but the information reported was not clearly identified in these terms in the BTR1. During the review, Malawi explained that information on national circumstances relevant to adaptation was presented in the main national circumstances chapter of the BTR1 and highlighted the need for capacity-building support to strengthen future reporting on adaptation-related national circumstances in accordance with the MPGs. The Party also explained that institutional arrangements relevant to adaptation are coordinated by the Environmental Affairs Department in close collaboration with sectoral government ministries, departments and agencies, including those responsible for agriculture, water, energy, infrastructure, human health, tourism and fisheries. In addition, the Party explained that its adaptation efforts are guided by the National Climate Change Management Policy and supported by several complementary frameworks, such as the National Adaptation Plan Framework, Malawi 2063, the National Adaptation Programme of Action and the 2023 Disaster Risk Management Act. The TERT encourages Malawi, as appropriate, to provide transparent and detailed information on national circumstances relevant to adaptation under the BTR section on climate change impacts and adaptation, including on institutional arrangements for climate change adaptation, data collection and QA processes, including roles and responsibilities; and the legal and policy frameworks linked to national adaptation efforts.
I.4.2	Specified in paragraph 108 of the MPGs	Malawi did not provide information on domestic adaptation priorities and progress towards those priorities for several sectors, including agriculture, water resources, human health, energy, fisheries, tourism, wildlife and forestry. The Party also did not report on adaptation challenges and gaps or barriers to adaptation for the agriculture sector, despite its critical importance to Malawi's socioeconomic development. During the review, Malawi explained that the domestic priority sectors for adaptation are agriculture, water resources, infrastructure, health and energy. Malawi acknowledged existing reporting-related capacity gaps in data collection across various sectors. The Party explained that major challenges affecting the agriculture sector include recurring dry spells, droughts, floods, pests and diseases, strong winds and hailstorms, limited access to agricultural inputs such as seeds and fertilizers, post-harvest losses and poor market access. Malawi highlighted the need for capacity-building support related to models for identifying and assessing vulnerabilities for crops and livestock. The TERT encourages Malawi to provide, as appropriate, information on domestic adaptation priorities and progress towards those priorities for all relevant sectors and on adaptation challenges and gaps, and barriers to adaptation related to the agriculture sector.
I.4.3	Specified in paragraph 109(a–c) and (f–g) of the MPGs	Malawi did not provide information on implementation of adaptation actions in accordance with the global goal on adaptation as set out in Article 7, paragraph 1, of the Paris Agreement; adaptation goals, actions, objectives, undertakings, efforts, plans (e.g. national adaptation plans and subnational plans), strategies, policies, priorities (e.g. priority sectors, priority regions or integrated plans for coastal management, water and agriculture), programmes and efforts to build resilience; or

ID#	*Reporting requirement*	*Description of area of improvement with encouragement*
		how best available science, gender perspectives and Indigenous, traditional and local knowledge are integrated into adaptation. Malawi did not provide information on efforts to integrate climate change into development efforts, plans, policies and programming, including related capacity-building activities, or on nature-based solutions to climate change adaptation. During the review, Malawi explained that the global goal on adaptation had not yet been finalized when the BTR1 was submitted, and adaptation actions are currently being implemented and will be comprehensively captured and presented in the national adaptation plan, which is still under development. Furthermore, Malawi is in the process of finalizing the alignment of the national adaptation plan with the global goal on adaptation framework, including through the adoption of the corresponding indicators, which will be more clearly and systematically reflected in future BTRs. Malawi explained that climate risk and vulnerability assessments are conducted using specific scientific methodologies, data sources and climate models for each adaptation sector, and women's participation in decision-making, as well as Indigenous and local knowledge, is incorporated through community consultations. The Party also explained that the integration of climate change into development planning is coordinated through the Environmental Affairs Department as the national focal point, with dedicated climate change focal points embedded in each ministry. The Party further explained that nature-based solutions have been applied in key sectors, including crop rotation with leguminous plants to enhance soil fertility (agriculture), catchment protection to reduce flood severity and water turbidity (water), clearing residential surroundings and draining stagnant pools to reduce malaria transmission (health) and reducing fishing pressure on Lake Malawi through gear regulation to enhance fish populations and species diversity (fisheries). The TERT encourages Malawi to report, as appropriate, information on the implementation of adaptation actions in accordance with the global goal on adaptation; adaptation goals, actions, objectives, undertakings, efforts, plans, strategies, policies, priorities, programmes and efforts to build resilience; how best available science (e.g. climate models, and software used to carry out the climate risk and vulnerability assessment for each adaptation sector), gender perspectives and Indigenous, traditional and local knowledge (e.g. detailed information on the participation of women and Indigenous and local communities in adaptation planning and implementation) are integrated into adaptation; efforts to integrate climate change into development efforts, plans, policies and programming across sectors; and nature-based solutions to climate change adaptation across all relevant adaptation sectors.
I.4.4	Specified in paragraph 110(a–b) of the MPGs	Malawi did not provide information on implementation of adaptation actions or on steps taken to formulate, implement, publish and update national and regional programmes, strategies and measures, policy frameworks (e.g. national adaptation plans) and other relevant information. During the review, Malawi clarified that NDC-related actions and responses have been identified and implemented in adaptation sectors other than agriculture and water resources, such as diversifying energy sources to address heavy dependence on biomass and hydropower for the energy sector and increasing the availability of nutritious foods to reduce malnutrition for the health sector. The Party further explained that adaptation measures have been implemented in activities related to reforestation, early warning systems and disease surveillance. However, Malawi acknowledged that information on implementation progress and outcomes in sectors other than agriculture and water resources was not systematically consolidated and reported under the adaptation implementation section in the BTR1, and explained that it is currently strengthening coordination, monitoring and reporting frameworks to address these gaps in future submissions. The TERT encourages Malawi to provide information, as appropriate, on implementation of adaptation actions across all relevant sectors and steps taken to formulate, implement, publish and update national and regional programmes, strategies and measures, policy frameworks (e.g. national adaptation plans) and other relevant information across different sectors.

ID#	*Reporting requirement*	*Description of area of improvement with encouragement*
I.4.5	Specified in paragraph 113(a) and (c–d) of the MPGs	With regard to monitoring and evaluation, Malawi did not provide detailed information on achievements, impacts, resilience, review, effectiveness and results; assessment of and indicators for (1) how adaptation increased resilience and reduced impacts; (2) when adaptation is not sufficient to avert impacts; and (3) how effective implemented adaptation measures are; or implementation, in particular on (1) transparency of planning and implementation; (2) how support programmes meet specific vulnerabilities and adaptation needs; (3) how adaptation actions influence other development goals; and (4) good practices, experience and lessons learned from policy and regulatory changes, actions and coordination mechanisms. During the review, Malawi explained that its reporting did not sufficiently elaborate on measurable outcomes owing to limitations in consolidated adaptation monitoring and evaluation systems, inconsistent sectoral reporting frameworks, and limited availability of quantified outcome data when the BTR1 was prepared. Malawi also explained that adaptation projects and assessment of the indicators were still under way, and comprehensive evaluations and impact assessments had not yet been completed. The Party stated that adaptation programmes are developed through vulnerability assessments and community consultations, targeting vulnerable groups such as smallholder farmers, women, youth and communities prone to floods and droughts. Malawi explained that the interventions under these programmes include the use of climate-smart agriculture, early warning systems and social protection programmes. Malawi acknowledged the need for improved institutional coordination, stronger climate data systems, sustainable financing mechanisms and enhanced monitoring frameworks in order to strengthen the implementation of adaptation actions and reporting. The TERT encourages Malawi, as appropriate, to report, with regard to monitoring and evaluation, information on achievements, impacts, resilience, review, effectiveness and results; assessment of and indicators for (1) how adaptation increased resilience and reduced impacts; (2) when adaptation is not sufficient to avert impacts; and (3) how effective implemented adaptation measures are; or implementation, in particular on (1) transparency of planning and implementation; (2) how support programmes meet specific vulnerabilities and adaptation needs; (3) how adaptation actions influence other development goals; and (4) good practices, experience and lessons learned from policy and regulatory changes, actions and coordination mechanisms.
I.4.6	Specified in paragraph 114 of the MPGs	Malawi did not provide information on the effectiveness and sustainability of adaptation actions. During the review, Malawi explained that adaptation actions are implemented and coordinated in collaboration with ministries, district councils, development partners, civil society organizations, non-governmental organizations and the private sector. Malawi also explained that the effectiveness of adaptation actions is assessed as part of the project evaluation process, with positive outcomes observed in areas such as crop productivity, watershed resilience and disaster preparedness. Malawi also noted that national monitoring and evaluation frameworks will be strengthened to improve reporting in future submissions. The TERT encourages Malawi to report information, as appropriate, on ownership, stakeholder engagement, alignment of adaptation actions with national and subnational policies, and replicability, and to report the results of adaptation actions and the sustainability of those results.
I.4.7	Specified in paragraph 115(c) of the MPGs	Malawi did not report in its BTR1 information on institutional arrangements to facilitate the implementation of activities related to averting, minimizing and addressing loss and damage associated with the adverse effects of climate change. During the review, Malawi clarified that activities to address loss and damage are implemented under the responsibility of the Department of Disaster Management Affairs, which works in close collaboration with the government ministries and agencies responsible for specific disaster-related issues. The TERT encourages Malawi to provide information, as appropriate, on the institutional arrangements in place to facilitate the implementation of activities

ID#	*Reporting requirement*	*Description of area of improvement with encouragement*
		related to averting, minimizing and addressing loss and damage associated with climate change impacts.
I.4.8	Specified in paragraph 116(a)(ii) and (vi) of the MPGs	Malawi did not provide information on efforts to share information, good practices, experience and lessons learned in relation to policy innovation and pilot and demonstration projects, and improving the durability and effectiveness of adaptation actions. During the review, Malawi explained that several climate change adaptation projects currently under implementation incorporate innovative approaches and pilot interventions, such as the Malawi Watershed Services Improvement Project and the Farmer Field Schools project. The TERT encourages Malawi to provide information, as appropriate, on efforts to share information, good practices, experience and lessons learned in relation to policy innovation and pilot and demonstration projects (e.g. from implemented innovative adaptation projects) and improving durability and effectiveness of adaptation actions.

III. Assistance in identifying capacity-building needs[1]

6. In order to facilitate continuous improvement of the reporting in the BTR on climate change impacts and adaptation under Article 7 of the Paris Agreement pursuant to chapter IV of the MPGs, the following capacity-building needs were identified during the review:

(a) Understanding and applying the requirements of the MPGs for reporting on climate change impacts and adaptation;

(b) Developing a standardized monitoring and evaluation tool for revising adaptation priorities, policies and activities;

(c) Developing institutional coordination and reporting frameworks specific to adaptation governance;

(d) Strengthening technical capacity to apply models for carrying out a vulnerability assessment for crops and livestock;

(e) Developing templates and tools for data collection for reporting on adaptation actions and responses for different sectors;

(f) Strengthening the measurement, reporting and verification system, including by enhancing frameworks for data monitoring, management and reporting with a view to improving the consistency and accuracy of climate-related data;

(g) Identifying and developing sector-specific indicators for tracking adaptation progress and strengthening early warning systems to support more effective climate resilience planning and assessments.

[1] As per para. 146(e) of the MPGs.

Annex II

Documents and information used during the review

A. Reference documents

BTR1 of Malawi. Available at https://unfccc.int/first-biennial-transparency-reports.

BTR1 CTF tables of Malawi.
Available at https://unfccc.int/first-biennial-transparency-reports.

"Guidance for operationalizing the modalities, procedures and guidelines for the enhanced transparency framework referred to in Article 13 of the Paris Agreement". Decision 5/CMA.3. FCCC/PA/CMA/2021/10/Add.2. Available at https://unfccc.int/documents/460951.

IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendia, K Miwa, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/2006gl.

IPCC. 2019. *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*. E Buendia, K Tanabe, et al. (eds.). Geneva: IPCC. Available at https://www.ipcc-nggip.iges.or.jp/public/2019rf/.

"Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement". Annex to decision 18/CMA.1. FCCC/PA/CMA/2018/3/Add.2. Available at https://unfccc.int/documents/193408.

NDC of Malawi. Available at https://unfccc.int/NDCREG.

NID of Malawi. Available at https://unfccc.int/first-biennial-transparency-reports.

"Reviews on a voluntary basis of the information reported pursuant to decision 18/CMA.1, annex, chapter IV, and respective training courses needed". Decision 9/CMA.4. FCCC/PA/CMA/2022/10/Add.2. Available at https://unfccc.int/documents/626570.

B. Additional information provided by the Party

Responses to questions during the review were received from Yamikani Idriss (Ministry of Natural Resources of Malawi), including additional material.