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

Addendum

Summary

This addendum to the report on the technical expert review of the first biennial transparency report of Kenya, 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, contains the results of the review of the consistency of the information submitted by the Party with those modalities, procedures and guidelines, and presents 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 26 to 30 May 2025 in Kisumu, Kenya.

* In the symbol for this document, 2024 refers to the year in which the biennial transparency report was submitted, not to the year of publication.

Abbreviations and acronyms

2006 IPCC Guidelines	*2006 IPCC Guidelines for National Greenhouse Gas Inventories*
AD	activity data
BTR	biennial transparency report
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CRT	common reporting table
CTF	common tabular format
EEA	European Environment Agency
EF	emission factor
EMEP	Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe
ETF	enhanced transparency framework under the Paris Agreement
FAOSTAT	statistical database of the Food and Agriculture Organization of the United Nations
F-gas	fluorinated gas
FX	flexibility
GCF	Green Climate Fund
GHG	greenhouse gas
HFC	hydrofluorocarbon
HWP	harvested wood products
ICAO	International Civil Aviation Organization
IE	included elsewhere
IEF	implied emission factor
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
ITMO	internationally transferred mitigation outcome
LEAP	Low Emissions Analysis Platform
LULUCF	land use, land-use change and forestry
MMS	manure management system(s)
MPGs	modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement
MRV	measurement, reporting and verification
N_2O	nitrous oxide
NA	not applicable
NAMA	nationally appropriate mitigation action
NDC	nationally determined contribution
NE	not estimated
NF_3	nitrogen trifluoride
NID	national inventory document
NIR	national inventory report
NMVOC	non-methane volatile organic compound
NO	not occurring
NO_X	nitrogen oxides
PaMs	policies and measures
PFC	perfluorocarbon
QA/QC	quality assurance/quality control

REDD+	reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks (decision 1/CP.16, para. 70)
SF_6	sulfur hexafluoride
TERT	technical expert review team

I. Areas of improvement[1] identified during the technical expert review of the Party's first biennial transparency report

1. Tables 1–14 present the results of the review of the consistency with the MPGs[2] of the information submitted by Kenya in its BTR1. All recommendations and encouragements contained in the tables are for the next BTR or NIR, unless otherwise specified.

A. General reporting provisions

Table 1
Areas of improvement relating to general reporting provisions

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
1.1	Specified in paragraph 6 of the MPGs	Kenya applied flexibility provisions in its reporting of information on the GHG inventory (paras. 28, 34, 35, 48 and 57 of the MPGs) and on tracking progress in implementing and achieving its NDCs under Article 4 of the Paris Agreement (paras. 85, 92, 95 and 102 of the MPGs). The TERT noted that the Party reported on the flexibility provisions applied to the GHG inventory only in the NIR; the information was not provided in the BTR (chap. 5). The TERT encourages Kenya to include a complete list of all flexibility provisions applied, including those related to the GHG inventory, in chapter 5 of the BTR, in line with the outline in chapter VII of annex IV to decision 5/CMA.3.

B. Greenhouse gas emissions and removals

Table 2
Areas of improvement relating to general findings on greenhouse gas emissions and removals

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
2.G.1	Specified in paragraph 18 of the MPGs Institutional arrangements	The TERT noted that Kenya's national inventory arrangements have affected its ability to consistently implement the general reporting requirements of the MPGs across all GHG inventory sectors. Specifically, from the NID and the additional information provided during the review, the TERT noted a lack of clearly defined responsibilities and tasks for the general functions of the GHG inventory, such as conducting QA/QC procedures, conducting key category analyses, applying flexibility provisions, ensuring time-series consistency, and selecting and applying methodological approaches for each sector. During the review, the Party identified capacity-building constraints that prevented it from implementing the functions associated with the GHG inventory. The TERT encourages Kenya to ensure that the functions of the GHG inventory are consistently implemented for each sector.
2.G.2	Specified in paragraph 19(b) of the MPGs Institutional arrangements	Kenya reported on its institutional arrangements and inventory development process in its NID (chap. 1.2), stating that the BTR1 was developed by interministerial and inter-institutional sector-based teams, with the Project Manager, also acting as GHG Inventory Coordinator, working closely with sector coordinators and sector teams to collect data, estimate emissions and draft the NID (chap. 1.2.1). It also reported that there are six sectoral working groups (energy, IPPU, waste, agriculture, forestry and other land use, and cross-cutting). However, the Party did not provide information on the institutions involved in each sectoral working group and how the groups ensure that sufficient AD are collected and that the selection and development of methods, EFs and other parameters are in accordance with the 2006 IPCC Guidelines.

[1] As referred to in paras. 7, 8, 146(d) and 162(d) of the MPGs, contained in the annex to decision 18/CMA.1.
[2] Decision 18/CMA.1, annex.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		During the review, Kenya provided additional information on the institutional composition of the sectoral working groups, which is as follows: (a) Overall coordination of the sectoral working groups: Climate Change Directorate of the Ministry of Environment, Climate Change and Forestry and representatives of the ETF Reporting Project; (b) Energy: Ministry of Energy and Petroleum, Ministry of Roads and Transport, Energy and Petroleum Regulatory Authority, National Transport and Safety Authority, Kenya Civil Aviation Authority, Kenya Power and Lighting Company, Kenya Electricity Generating Company, Kenya Pipeline Company and Kenya Railways Corporation; (c) IPPU: Ministry of Investments, Trade and Industry, Kenya Industrial Research and Development Institute and Kenya Association of Manufacturers; (d) Agriculture: Ministry of Agriculture and Livestock Development and Kenya Agricultural and Livestock Research Organization; (e) Forestry and other land use: Ministry of Environment, Climate Change and Forestry, Kenya Forest Service and Directorate of Resource Surveys and Remote Sensing; (f) Waste: National Environment Management Authority, State Department for Environment and Climate Change and county governments; (g) Cross-cutting: Kenya National Bureau of Statistics and Kenya Meteorological Department. The TERT recommends that Kenya include in its NID information on the institutional composition of its GHG inventory sectoral working groups and on their specific responsibilities to demonstrate that AD collection and the selection and development of methods, EFs and other parameters are in accordance with the 2006 IPCC Guidelines.
2.G.3	Specified in paragraph 19(c) of the MPGs Institutional arrangements	In its BTR (chap. 1.5.2.1), Kenya provided information on its archiving procedures and activities at the sector level, including on the roles and responsibilities of sector coordinators. In addition, Kenya indicated in BTR figure 1.1 that a documentation and archiving unit is part of the institutional framework for preparing the GHG inventory. However, no information on this unit is included in the NID. During the review, Kenya clarified that the Climate Change Directorate coordinates the sectors in collecting and compiling data and estimating emissions for the inventory. Currently, each sector stores its data as the Directorate is still in the process of setting up a centralized archiving system. Further, Kenya informed the TERT that it is seeking resources, through a project developed in partnership with the European Union, to operationalize its GHG institutional framework, including to establish the documentation and archiving unit. As part of its national efforts, the Government of Kenya has already recruited an assistant director for the inventory who will also oversee the unit. Kenya acknowledged that to establish and operationalize the documentation and archiving unit, it needs capacity-building support. The TERT encourages Kenya to continue its efforts to establish and operationalize the documentation and archiving unit as part of its institutional framework for preparing the GHG inventory and to report on its progress in doing so.
2.G.4	Specified in paragraphs 25, 41 and 42 of the MPGs Key category analysis	In the NID (chap. 1.4), Kenya reported only information on the level assessment, while both level and trend assessments are reported in CRT 7. According to the MPGs, a key category analysis with both level and trend assessment shall be performed in a manner consistent with the 2006 IPCC Guidelines. During the review, Kenya provided additional information on its key category analysis, including for both level and trend assessment, with and without LULUCF, following the guidance in the 2006 IPCC Guidelines. The Party explained that the results were included in CRT 7 only because the NID had already been finalized.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		The TERT recommends that Kenya conduct the key category analysis and report on key categories in accordance with the MPGs and the 2006 IPCC Guidelines.
2.G.5	Specified in paragraphs 6, 29 and 44 of the MPGs Uncertainty analysis	Kenya applied flexibility provisions with respect to reporting a quantitative uncertainty analysis. However, the Party did not provide an estimated time frame for improving this aspect of its reporting. During the review, Kenya explained that it has identified uncertainty analysis as a priority area for capacity-building and that it intends to meet this reporting requirement in the next five years, subject to the availability of resources. The TERT recommends that Kenya report in the BTR a self-determined estimated time frame for implementing improvements related to uncertainty analysis. In accordance with paragraph 29 of the MPGs, the TERT encourages the Party to provide a quantitative estimate of uncertainty for all source and sink categories of the GHG inventory.
2.G.6	Specified in paragraphs 34–35 of the MPGs QA/QC and verification	Kenya did not provide an inventory QA/QC plan in the NID, nor did it provide information on the inventory agency responsible for implementing QA/QC. The TERT noted that Kenya applied flexibility for this provision, consistent with its capacity. During the review, Kenya explained that it needs capacity-building support to elaborate a QA/QC plan, which would include information on the inventory agency responsible for implementing QA/QC. In accordance with paragraphs 34–35 of the MPGs, the TERT encourages Kenya to (1) elaborate an inventory QA/QC plan, including identification of the inventory agency responsible for implementing QA/QC; and (2) implement and report on general inventory QC procedures in accordance with its QA/QC plan, including category-specific QC procedures for key categories. In accordance with paragraph 34 of the MPGs, the TERT also encourages Kenya to carry out QA comprising a basic expert peer review of its inventories, in accordance with the 2006 IPCC Guidelines.
2.G.7	Specified in paragraphs 6 and 34 of the MPGs QA/QC and verification	Kenya applied flexibility provisions with respect to reporting the QA/QC plan. However, the Party did not provide an estimated time frame for improving this aspect of its reporting. During the review, Kenya explained that the QA/QC plan is linked to the institutionalization of reporting by sectors. Subject to the availability of financial resources, the Party intends to address this requirement within the next five years. The TERT recommends that Kenya provide in the BTR a self-determined estimated time frame for implementing improvements and resolving capacity constraints related to developing a QA/QC plan.
2.G.8	Specified in paragraph 32 of the MPGs Completeness	Kenya reported in its NID (chap. 1.7.2) a list of categories considered to be insignificant, which together account for 1.29 per cent of national total GHG emissions. The TERT noted that that figure is not in line with the MPGs, which require the total national aggregate of estimated emissions of all gases for categories considered insignificant to remain below 0.1 per cent of national total GHG emissions, excluding LULUCF. During the review, Kenya explained that the categories it listed were deemed insignificant on the basis of modelled estimates showing emissions below 0.05 per cent of national total GHG emissions (excluding LULUCF) or below 500 kt CO_2 eq, whichever was lower. Kenya acknowledged that this approach may not fully align with the MPGs and may need to be revised for the next submission, pending capacity-building in this regard. The TERT recommends that Kenya assess category insignificancy in accordance with the MPGs, ensuring that the total national aggregate of estimated emissions of all gases for categories considered insignificant remains below 0.1 per cent of national total GHG emissions, excluding LULUCF.

Table 3
Areas of improvement of the reporting on greenhouse gas emissions and removals – energy sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
3.E.1	Specified in paragraphs 6, 29 and 44 of the MPGs 1. General (energy sector)	Kenya did not provide quantitative estimates or a qualitative discussion of the uncertainty associated with emission and removal estimates for key categories for the energy sector. Kenya reported in its NID (chap. 1.6) that it applied flexibility provisions. During the review, Kenya clarified that it lacks the capacity to estimate and report uncertainty and, therefore, applied flexibility provisions (see ID# 2.G.5). The TERT encourages Kenya to provide a qualitative discussion of the uncertainty of emissions for all source categories in the energy sector.
3.E.2	Specified in paragraph 35 of the MPGs 1. General (energy sector)	Parties should apply category-specific QC procedures in accordance with the 2006 IPCC Guidelines for key categories and for individual categories where significant methodological changes and/or data revisions have occurred. However, the TERT noted that Kenya did not carry out category-specific QC procedures, including for key categories, for the energy sector. During the review, Kenya clarified that it lacks the capacity to implement such procedures but aims to improve this aspect of its reporting for its next submission. The TERT acknowledged that the Party applied flexibility provisions regarding QA/QC matters (see ID# 2.G.6 in table 2). The TERT encourages Kenya to carry out category-specific QC procedures in line with the 2006 IPCC Guidelines for key categories and for the individual categories of the energy sector where significant methodological changes and/or data revisions have occurred.
3.E.3	Specified in paragraphs 32 and 47 of the MPGs 1.B Fugitive emissions from fuels – all fuels – CO_2, CH_4 and N_2O	Kenya reported AD and emissions for all subcategories under category 1.B fugitive emissions from fuels as "NE", stating that the emissions under this category are insignificant (NIR table 3.2). However, the TERT noted that Kenya did not provide supporting information to demonstrate the insignificance of these emissions in accordance with the MPGs. Specifically, the Party did not provide the likely level of emissions to show that they fall below the insignificance threshold in accordance with paragraph 32 of the MPGs. During the review, the Party acknowledged that it did not follow the 2006 IPCC Guidelines in determining the insignificance of fugitive emission categories, and explained that this was because of lack of AD. The TERT recommends that Kenya either report emissions for subcategories under category 1.B or demonstrate that these emissions are insignificant, by using approximate or proxy data to determine the likely level of fugitive emissions.
3.E.4	Specified in paragraphs 47 and 53 of the MPGs 1.A.3.d Domestic navigation – all fuels – all gases International navigation – all fuels – all gases	Kenya did not report emissions from international navigation or domestic navigation. During the review, the Party clarified that this omission was due to a lack of disaggregated data that would allow for the estimation of emissions from international navigation to be separated from the estimation of emissions from domestic navigation. The Party indicated that it lacks the capacity to collect the disaggregated data. The TERT recommends that the Party collect data that would enable it to report emissions from domestic navigation. The TERT encourages Kenya to improve the collection of data that would enable it to estimate emissions from domestic waterborne navigation separately from emissions from international waterborne navigation.
3.E.5	Specified in paragraph 54 of the MPGs Feedstocks, reductants and other non-energy use of fuels – all fuels – all gases	Kenya reported in its NID (p.27) that emissions from feedstocks and the non-energy use of fuels were not separated from emissions from the energy use of fuels owing to a lack of disaggregated data, which, in turn, arose from limited capacity. The TERT noted that this is not in accordance with the reporting requirement, which states that Parties should clearly indicate how feedstocks and the non-energy use of fuels have been accounted for in the inventory, whether under the energy or industrial processes sector.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		The TERT encourages Kenya to improve the collection of data that would enable it to report feedstocks, reductants and other non-energy use of fuels separately from reporting under the energy sector in CRT 1.A(d).

Table 4
Areas of improvement of the reporting on greenhouse gas emissions and removals – industrial processes and product use sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
4.I.1	Specified in paragraphs 31 and 45 of the MPGs 2. General (IPPU) – all gases	Under the IPPU sector, Kenya reported "NE" for most categories and gases in the CRTs but did not provide the reasons for not reporting numerical data, as required by paragraph 45 of the MPGs. Moreover, many cells were left blank throughout the CRTs. During the review, the Party clarified that some activities for which "NE" was reported do not in fact occur in the country. The TERT recommends that Kenya, for emissions and associated AD for categories and gases that are not reported, provide in the CRTs the reasons for reporting them as "NE" or, for categories of activities that do not occur in the country, use the correct notation key ("NO"). The TERT notes that where flexibility provisions are applied, the Party may use "FX" instead of "NE" for reporting AD and emissions of HFCs, PFCs, SF_6 and NF_3 in the relevant CRTs, in line with decision 5/CMA.3.
4.I.2	Specified in paragraphs 30–31 of the MPGs 2. General (IPPU) – CO_2, CH_4 and N_2O	Kenya did not provide information in the NID for categories 2.B chemical industry (other than for 2.B.7 soda ash production), 2.C metal industry and 2.E electronics industry, despite the availability of methodologies for those categories in the 2006 IPCC Guidelines. During the review, the Party explained that there are no industrial plants in Kenya that generate emissions that belong under those categories. The Party also clarified that it intends to use notation key "NO" instead of "NE" to report the categories for the next submission. The TERT encourages Kenya to ensure the transparency of its reporting by including in the NID clear information on the activities that do not occur in the country. The TERT recommends that the Party report "NO" rather than "NE" for those categories in the relevant CRTs.
4.I.3	Specified in paragraphs 20, 21 and 23 of the MPGs 2.A.1 Cement production – CO_2	Kenya reported in its NID (p.47) that a tier 1 method was used to estimate CO_2 emissions for category 2.A.1 cement production, which is a key category. The TERT noted that the use of a tier 1 method is not consistent with the method recommended by the relevant decision trees in the 2006 IPCC Guidelines (vol. 3, chap. 2, p.2.9, figure 2.1) and is therefore not in accordance with the MPGs (paras. 20–21). Kenya explained in the NID that, in accordance with paragraph 23 of the MPGs, it used a tier 1 method owing to the lack of country-specific parameters and clinker production data. The Party also included this category in its improvement plan. The TERT encourages Kenya to make every effort to collect the necessary data to estimate CO_2 emissions from cement production using the tier 2 methodology at a minimum.
4.I.4	Specified in paragraphs 26, 27 and 57 of the MPGs 2.A.1 Cement production – CO_2	The Party reported in its NID (p.47 and table 4.4) the amount of imported clinker used to estimate emissions for category 2.A.1 cement production. However, the TERT noted that the time series for CO_2 emissions from cement production may not be consistent, as data on clinker imports, which should be subtracted from the total amount of cement, are only available from 2011 onward. As a result, CO_2 emissions for 1990 up until 2011 may be overestimated. During the review, Kenya explained that it is considering exploring the use of surrogate data for future submissions to fill in the missing data on clinker for years prior to 2011. The TERT recommends that Kenya report a consistent annual time series starting from 1990. The TERT encourages Kenya to ensure time-series consistency in CO_2 emissions from cement production by using surrogate data to fill AD gaps or

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		applying other methods consistent with the splicing techniques outlined in the 2006 IPCC Guidelines (vol. 1, chap. 5) or to apply a higher-tier method for estimating CO_2 emissions for this category.
4.I.5	Specified in paragraphs 32, 45 and 47 of the MPGs 2.A.4 Other process uses of carbonates – CO_2	Kenya did not provide any information in the NID for category 2.A.4 other process uses of carbonates, which includes subcategories for which methodologies are available in the 2006 IPCC Guidelines (e.g. ceramics, other uses of soda ash). The Party reported AD and IEFs for this category as "NE" but did not provide any explanation for the use of this notation key in CRT 9. During the review, the Party explained that some other process uses of carbonates do indeed occur in Kenya; however, protocols for data collection and sharing are not yet in place owing to capacity constraints. The TERT recommends that Kenya ensure the completeness of its reporting by either (1) collecting the data necessary to estimate emissions for category 2.A.4 or providing in the NID and/or CRT 9 the reasons for reporting "NE", as per paragraph 45 of the MPGs, or (2) providing information in the NID demonstrating that emissions for this category are insignificant in accordance with paragraph 32 of MPGs.
4.I.6	Specified in paragraphs 45 and 47 of the MPGs 2.D Non-energy products from fuels and solvent use – CO_2	The Party did not report emission estimates or supporting information in the NID for category 2.D non-energy products from fuels and solvent use, which includes subcategories for which methodologies are available in the 2006 IPCC Guidelines. Kenya reported AD and EFs for this category as "NE" in the CRTs. During the review, Kenya confirmed that activities under this category do occur in the country, but have not been reported yet owing to capacity constraints. Kenya informed the TERT that it is prioritizing the development of sector-specific data-collection systems to improve future reporting under this category, for example harmonized templates for collecting fuel and process data from industries. The TERT recommends that Kenya ensure the completeness of its reporting by either collecting the data necessary to estimate emissions for relevant subcategories under category 2.D or providing in the NID and/or CRT 9 the reasons for reporting "NE", as per paragraph 45 of the MPGs.
4.I.7	Specified in paragraphs 6 and 48 of the MPGs 2.F Product uses as substitutes for ozone-depleting substances – HFCs and PFCs	Kenya reported in its NID (p.12, table 1.9) that it applied flexibility provisions for not reporting F-gases. However, the TERT noted that the Party did not concisely clarify the capacity constraints leading to the use of these provisions, although it provided a conditional deadline (2028, if support is available) for improving this aspect of its reporting. During the review, the Party explained that it is implementing the Kigali Amendment to the Montreal Protocol and is in the process of establishing a MRV system to enable comprehensive tracking and reporting of F-gas consumption and emissions. These efforts will serve as the foundation for improved reporting on F-gases under the UNFCCC for future inventory submissions. The TERT recommends that Kenya ensure the transparency of its reporting by including in the NID a thorough explanation, as was provided during the review, on the capacity constraints that are affecting its efforts to improve reporting on F-gases.
4.I.8	Specified in paragraphs 45 and 47 of the MPGs 2.G.3 N_2O from product uses – N_2O	The Party reported AD and N_2O emissions from product uses as "NE" and did not provide supporting information in its NID for any subcategory under category 2.G.3, despite the availability of methodologies in the 2006 IPCC Guidelines. During the review, the Party clarified that on further assessment, it determined that activities leading to GHG emissions under category 2.G.3 do not currently occur in the country. Nevertheless, the TERT considers that the Party could at least report N_2O emissions for subcategory 2.G.3.a medical use of products (e.g. anaesthetic use, analgesic use and veterinary use). The TERT recommends that Kenya ensure the completeness of its reporting by either collecting the data necessary to estimate emissions for subcategory 2.G.3.a medical use of products or providing in the NID and/or CRT 9 the reasons for reporting "NE" for this and other subcategories under category 2.G.3, as per paragraph 45 of the MPGs.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
4.I.9	Specified in paragraph 51 of the MPGs 2.H Other (IPPU) – CO, NO_X and NMVOCs	Kenya reported "NE" for AD and EFs under category 2.H other (IPPU) in the CRTs. Kenya also did not provide information in its NID regarding emissions for this category or the rationale behind reporting "NE". During the review, Kenya confirmed that activities such as pulp and paper production and food and beverage manufacturing do occur in the country. The Party explained that, at the time of reporting, it faced significant data limitations related to these industries, including inconsistent or incomplete reporting of production volumes and fuel use, absence of harmonized sector-specific data-collection protocols and lack of country-specific EFs for key processes. As a result, it was not possible to generate credible emission estimates using IPCC methodologies, even at the tier 1 level, without introducing a high level of uncertainty. Noting that the 2006 IPCC Guidelines do not provide a methodology or default EFs for estimating emissions for category 2.H, the TERT encourages Kenya to enhance the completeness of its reporting by making an effort to collect the data necessary to estimate emissions of precursor gases for category 2.H using methodologies other than those of the IPCC (e.g. set out in part 2.B.H of the *EMEP/EEA air pollutant emission inventory guidebook 2023*) and to include an explanation for the use of "NE" in CRT 9.

Table 5
Areas of improvement of the reporting on greenhouse gas emissions and removals – agriculture sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
5.A.1	Specified in paragraphs 27, 39 and 57 of the MPGs 3. General (agriculture) – CH_4	Kenya reported in NID table 5.3 annual average livestock population numbers per animal type from 1990 to 2022. These data were used to calculate CH_4 emissions from enteric fermentation and CH_4 emissions from manure management. According to the NID, the population data have different sources: (1) two agricultural censuses, conducted by the Kenya National Bureau of Statistics in 2009 and 2019, and (2) annual updates, made since 2009, from the national livestock statistics maintained by the Ministry of Agriculture and Livestock Development, which are based on sampling surveys. However, the NID does not include information on the approach used to construct the final time series and how consistency in the time series was ensured. The TERT also noted that, for the latest years, livestock population numbers have increased significantly, but no explanation was provided by the Party to justify the trend. During the review, the Party explained that AD before 2009 were based on estimates derived from the number of animals that were vaccinated. Given that most animals likely were not vaccinated, these figures likely underestimate the actual population size. The Party clarified that the large increase in livestock populations since 2009 reflect actual data from the censuses. In addition, the Party provided weather data that indicate livestock birth and mortality, and hence population size, are related to the occurrence of droughts and to rainfall. Kenya also explained that, prior to 2012, data on animal numbers were collected through the administrative statistics system of the Ministry of Agriculture, Livestock and Fisheries by province and county, while since 2012, following constitutional devolution policies, county-level dairy cattle data have been collected by the (at that time) Ministry of Agriculture, Livestock, Fisheries and Irrigation. Because of the transition to county-level data collection, various challenges have emerged, such as a lack of personnel and technical capacities (relating to software) to collect, clean, analyse and aggregate the data. The TERT recommends that Kenya ensure consistency in the time series by harmonizing the available data sets from the different sources of AD. The TERT encourages the Party to use primarily the most reliable sources with other sources providing surrogate data, and to construct the time series in a consistent manner in accordance with paragraph 27 of the MPGs and the 2006 IPCC Guidelines. The TERT also recommends that the Party improve the transparency of its reporting by providing in the NID information on the data-collection process for livestock population for each species and quantitative data on droughts and rainfall justifying fluctuations in livestock numbers since 2009.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
5.A.2	Specified in paragraphs 35 and 39 of the MPGs 3.A.1 Cattle – CH_4	The Party reported in its NID (p.64) that it used a tier 2 methodology to estimate CH_4 emissions from enteric fermentation for category 3.A.1. NID table 5.5 presents the annual total animal populations and IEFs used for dairy cattle. However, the TERT identified a discrepancy for 2022: the IEFs reported in NID table 5.5 (43.28 kg CH_4/head/year) differ from the IEFs derived by dividing the total reported emissions by dairy cattle population using data in the same table (38.46 kg CH_4/head/year). This inconsistency corresponds to a difference of 314 t CH_4 or about 5 per cent of total CH_4 emissions for 2022. In addition, Kenya reported in the NID a decline in emissions for 2021 and 2022 compared with the 2020 level. The Party attributed the decline to a reduction in livestock numbers resulting from severe droughts, government offtake interventions and improvements in pasture and fodder quality. During the review, the Party indicated that it identified an error in the calculation spreadsheets. Specifically, incorrect values were assigned to net energy for pregnancy for 2021 and 2022, which affected the accuracy of the emission estimates for those years and also resulted in the difference in IEFs. The TERT recommends that Kenya correct the error identified during the review in the calculation spreadsheets and recalculate CH_4 emissions from enteric fermentation for category 3.A.1 accordingly. The TERT encourages the Party to strengthen its QC procedures to ensure that data entry and calculation errors are systematically detected and addressed.
5.A.3	Specified in paragraphs 21–23 and 39 of the MPGs 3.B.1 Cattle – CH_4	Kenya reported in the NID (p.70) that, in 2022, total CH_4 emissions from manure management came mostly from dairy cattle (37 per cent), while other cattle (non-dairy cattle) accounted for 29 per cent and camels, goats and sheep accounted for the remaining 34 per cent. Category 3.B manure management is a key category according to the level assessment for 2022, other cattle, which is a significant animal type, but for which emissions are estimated using a tier 1 methodology. The TERT notes that this is not in accordance with the 2006 IPCC Guidelines. Furthermore, emissions from manure management from non-dairy cattle were reported in CRT 3.A(a) as "NA", which is inconsistent with the description reported in the NID. The TERT recommends that Kenya apply the tier 2 methodology for estimating CH_4 emissions from manure management for significant animal types, including other cattle (non-dairy cattle), or provide in the NID a clear explanation as to why it was not possible to implement the tier 2 approach, for example owing to lack of resources. The TERT also recommends that Kenya provide estimates of CH_4 emissions from dairy cattle in the CRTs consistently with the information reported in the NID (p.70). The TERT encourages the Party to report on its efforts to improve future estimates of CH_4 emissions from manure management. The TERT also encourages Kenya to make every effort to use a tier 2 method for estimating CH_4 emissions from manure management for camels given that the Party indicated during the review that, despite it not being a significant subcategory (12 per cent of total CH_4 emissions), country-specific data on camels for the purpose of using a tier 2 method have become available since the submission of the BTR1.
5.A.4	Specified in paragraph 39 of the MPGs 3.B.1 Cattle – CH_4 and N_2O	The Party reported in NID table 5.11 the percentage shares, based on expert judgment, of the different MMS for all animal types. For dairy cattle, the shares of MMS applied for estimating N_2O emissions from manure management using the tier 1 approach were 50 per cent pasture, range and paddock, 30 per cent solid storage and 20 per cent daily spread. However, in annex II to the NID, a tier 2 approach for estimating N_2O emissions from manure management of dairy cattle is presented. The TERT also noted that table 13 (p.153) of the same annex contains MMS shares for intensive, semi-intensive and extensive MMS that differ from those used to estimate N_2O emissions from manure management of dairy cattle as reported in NID table 5.11. In addition, the NID does not clearly identify which MMS shares were used for calculating CH_4 emissions from dairy cattle or whether Kenya applied tier 1 or tier 2, nor does CRT 3.B(a) provide information on the shares of MMS used to estimate CH_4 emissions from manure management. Furthermore, no information regarding the reasoning behind or the experts and institutions involved in the expert judgment was provided by the Party.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		The TERT recommends that Kenya provide transparent information on which methodological tier was used for estimating N_2O emissions from manure management of dairy cattle, as well as on which MMS shares were used in the final calculations and whether the same shares were applied for estimating CH_4 emissions from manure management of dairy cattle. The TERT also recommends that the Party provide transparent, detailed information on the basis for the expert judgment applied for determining MMS shares at the tier 2 methodological level for dairy cattle, for example whether the Party used the protocol to elicit expert judgment outlined in the 2006 IPCC Guidelines (vol. 2, chap. 2, annex 2A.1).
5.A.5	Specified in paragraphs 39 and 44 of the MPGs 3.C Rice cultivation – CH_4	To estimate CH_4 emissions from rice cultivation, Kenya used data on the annual rice cultivation area and the proportion under different water management systems provided by the Ministry of Agriculture and Livestock Development. However, the NID does not clearly indicate whether the harvested area accounts for multiple cropping cycles within a year. In addition, while a 10 per cent uncertainty was assigned to the rice cultivation area data on the basis of expert judgment, no explanation of or justification for the expert judgment was provided in the NID. During the review, the Party clarified that multiple cultivation cycles per year are reflected in the harvested area estimates, for instance, the reported peak area for 2022 corresponds to a three-cycle harvest season. The TERT recommends that Kenya improve the transparency of its reporting by providing in its NID a clear explanation of the rationale behind and justification for the expert judgment used to derive the uncertainty estimate and detailed information on how multiple harvests per year are accounted for in calculating harvested areas.
5.A.6	Specified in paragraphs 40 and 47 of the MPGs 3.D Direct and indirect N_2O emissions from agricultural soils – N_2O	In NID table 5.17, Kenya reported the annual amounts of synthetic nitrogen fertilizers applied to soils, disaggregated by fertilizer type. However, the NID does not include information in narrative or tabular format on the areas under annual crops, crop yields, nitrogen input from organic manure, or urine and dung directly applied to soils by grazing animals. In addition, mineralization/ immobilization of nitrogen associated with loss/gain of soil organic matter is reported as "NE" in CRT 3. During the review, the Party explained that while the total amount of manure applied to soils was estimated under category 3.D.1.b organic nitrogen fertilizers, it was not possible to disaggregate this total between manure applied to soil and manure used for feed, fuel or construction. Further, the Party clarified that urine and dung were estimated at the tier 2 level for dairy cattle and the tier 1 level for other animals. The TERT notes that the Party did not provide the underlying AD (e.g. the number of animals managed in pasture, range and paddock MMS by species) or provide evidence that these estimates align with the proportions of animals under each MMS. The TERT recommends that Kenya estimate N_2O emissions from organic fertilizer by using the tier 1 methodology at the minimum, for instance by assuming all manure is applied to soils (and not used for other purposes) and using the 2006 IPCC Guidelines default EF of 0.01 for calculations. The TERT also recommends that the Party improve the transparency of its reporting by clearly documenting the AD and parameters used to estimate N_2O emissions from agricultural soils for each subcategory of category 3.D, to the extent possible, explaining all assumptions and the methods used to construct annual time series and citing all AD sources.
5.A.7	Specified in paragraphs 40 and 47 of the MPGs 3.D.1.d Crop residues – N_2O	In its NID (p.82) the Party reported crop area and production data for major crops, including maize, coffee, Irish potatoes, sugar cane, tea and wheat, provided by the Ministry of Agriculture and Livestock Development. These data were used to estimate nitrogen input from crop residues and N_2O emissions from agricultural soils. The TERT noted that, while AD for synthetic fertilizers were provided in NID table 5.17, the NID does not include AD for nitrogen-fixing crops nor does it specify whether all relevant crops in the country were considered in the estimation of nitrogen input from crop residues. During the review, the Party clarified that only the major crops mentioned in the NID (p.82) were considered for estimating nitrogen input from crop residues. It

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		explained that rice was excluded owing to a misunderstanding, namely the Party did not realize that the rice cultivation category includes N_2O emissions and CH_4 emissions. In addition, other crops such as root crops (cassava and potatoes) and beans were not included in the emission calculations, even though these crops are grown in significant quantities and are reported in Kenya's official statistics submitted to FAOSTAT. The TERT recommends that Kenya estimate (1) the nitrogen input from crop residues applied to managed soils, using available AD and tier 1 default EFs from the 2006 IPCC Guidelines, and (2) the corresponding N_2O emissions. The TERT also recommends that the Party describe in the NID the AD, including for all crops cultivated, used to estimate the nitrogen input from crop residues, and the corresponding methods applied to estimate the N_2O emissions from agricultural soils, at a disaggregated level, to the extent possible, and separate emissions from crop residues and synthetic fertilizer.

Table 6
Areas of improvement of the reporting on greenhouse gas emissions and removals – land use, land-use change and forestry sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
6.L.1	Specified in paragraph 24 of the MPGs 4. General (LULUCF)	Kenya reported carbon stock changes in mineral soils under land converted to other land-use categories using a single reference value for soil organic carbon stock for each land-use category, which was based on default values from the 2006 IPCC Guidelines (vol. 4, chap. 2, table 2.3). During the review, the Party explained that it faced challenges in accessing country-specific data on mineral soils and thus accurately estimating carbon stock changes for each mineral soil type across all land-use categories. The TERT encourages Kenya to undertake research on mineral soils to obtain country-specific data (e.g. representative values for organic carbon density by soil type) in order to improve the accuracy of estimates of carbon stock changes in mineral soils for each land type converted to another land-use category.
6.L.2	Specified in paragraph 31 of the MPGs 4. General (LULUCF) – CO_2	The TERT noted that in CRTs 4.A–4.E some values for emission and removal estimates are missing (i.e. cells were left blank), specifically those related to carbon stock changes in living biomass under land converted to another land-use category. The following cases were identified: (a) CRT 4.A: losses from cropland converted to forest land and grassland converted to forest land; (b) CRT 4.B: gains from forest land converted to cropland and wetlands converted to cropland, and losses from wetlands converted to cropland; (c) CRT 4.C: gains from forest land converted to grassland, and losses from wetlands converted to grassland and other land converted to grassland; (d) CRT 4.D: some losses are reported under conversion to wetlands, but the land-use category prior to conversion is not specified; (e) CRT 4.E: losses from cropland converted to settlements. During the review, Kenya clarified that the cells in the CRTs were left blank because no such land-use conversions occurred. The TERT recommends that Kenya report "NO" for emissions or removals arising from carbon stock changes in living biomass under land conversions that do not occur in the country, in accordance with the MPGs, rather than leaving the corresponding CRT 4.A–4.E cells blank.
6.L.3	Specified in paragraph 40 of the MPGs 4. General (LULUCF) – CO_2	Kenya estimated emissions and removals resulting from land-use changes within the same category (e.g. perennial cropland converted to annual cropland). However, the CRTs do not include a level beyond land-use category, which reduces transparency. For example, even when the area of cropland remaining cropland remains unchanged from the previous year, the

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		Party reported emissions from losses resulting from the land-use conversion within the same land-use category. This may cause confusion when AD and emission trends are being compared across the time series. During the review, the Party clarified that subcategorization of emissions was considered in the inventory, as indicated in the NID. The Party also expressed its intention to report emissions and removals at the subcategory level in future CRT submissions, contingent on resolving technical challenges in entering data in the ETF GHG inventory reporting tool. The TERT encourages Kenya to improve the transparency of its NIR by reporting emissions and removals from land-use changes in the CRTs for the LULUCF sector at the lowest subcategory level, to the extent possible, at which they are estimated under each land-use category.
6.L.4	Specified in paragraph 40 of the MPGs Land representation	The Party reported in its NID a sample of land-use matrices showing annual changes (in figure 6.5) and changes occurring over multi-year periods (in figures 6.6–6.8). Annual land-use changes from 2001 to 2021 were estimated by dividing the changes during a multi-year period (e.g. 2000–2005, 2005–2010, 2013–2017 and 2018–2021) evenly across each year in the period, that is, by assuming that the annual change takes place at a constant rate in the same period. However, the TERT noted that the land-use matrices reported in CRT 4.1 do not contain any values for annual land-use changes and instead, "NO" is reported, which is not consistent with the land representation approach described in the NID. As such, the TERT believes that Kenya could report annual changes in the land-use matrices in CRT 4.1, in line with table 3.5 of the 2006 IPCC Guidelines (vol. 4, chap. 3.3.2). During the review, the Party acknowledged that the land-use matrices in CRT 4.1 capture only areas of land remaining in the same land-use category for a given year because the matrices were generated automatically from the IPCC inventory software and directly uploaded to the ETF reporting tools. Nevertheless, the Party indicated its intention to improve this aspect of its reporting for future submissions. The TERT recommends that Kenya enhance the transparency of its reporting by filling in annual changes between land-use categories from 2001 onward in the land-use matrices in CRT 4.1, to the extent possible, in accordance with the land representation approach used by the Party, as described in the NID.
6.L.5	Specified in paragraphs 26, 27, 47 and 57 of the MPGs Land representation – CO_2	The TERT noted that in CRTs 4.A–4.F some annual land-use changes were not calculated or reported for 2011, 2012, 2013, 2018 and 2022 (in addition to those years for which Kenya applied the flexibility provisions, i.e. 1990–2000), resulting in data inconsistencies resulting from those gaps. During the review, the Party explained that it assumed land areas during those years remained unchanged from previous years. The TERT noted that such assumptions should be clearly documented with an explanation and a rationale in the NID, in accordance with the 2006 IPCC Guidelines. In addition, the TERT noted that these data inconsistencies may cause overestimation or underestimation of emissions by sources and removals by sinks and could introduce inconsistency in the time series. During the review, the Party acknowledged the data inconsistencies identified by the TERT and expressed its intention to apply a new approach to identify land-use changes for the entire time series, including the period for which flexibility was applied. The Party noted that this approach will require collecting data for years between 1989 and 2001 to establish land-use changes from 1990 to 2000. Moreover, to estimate carbon stock changes in mineral soils under land converted to another land-use category from 1990 onward, the Party will require data for changes in land use since 1971, as changes in carbon stock are assumed to persist for 20 years after the land-use change occurred. The TERT recommends that Kenya report the missing data on areas of annual land-use changes – which it could obtain by analysing changes between 2010 and 2013 and between 2017 and 2018 using remote-sensing data already

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		available to it, or if that is not feasible, by applying a splicing technique outlined in the 2006 IPCC Guidelines (vol. 1, chap. 5) – in order to ensure a consistent time series in land representation from 2001 onward. The TERT encourages Kenya to collect data on land-use areas from 20 years prior to the first reported year onward to complete its estimation of carbon stock changes in mineral soils for land converted to another land-use category.
6.L.6	Specified in paragraphs 21 and 39 of the MPGs 4.A.1 Forest land remaining forest land – CO_2	Kenya estimated losses and gains in carbon stocks in living biomass resulting from degradation and canopy enhancement respectively. Using remote-sensing data, the Party quantified the changes by analysing variations in net canopy closure categorized into three classes – open, moderate and dense – and applying the stock change calculation method. However, the TERT noted the information in the NID is not sufficiently transparent to enable a clear understanding of how the AD were used and which EFs were applied to estimate gains and losses in living biomass pools. The TERT also noted that losses in living biomass reported in CRT 4.A were estimated using accumulated converted areas, which is not in accordance with the method provided in the 2006 IPCC Guidelines (vol. 4, chap. 2, equation 2.16). During the review, Kenya provided detailed clarification of its estimations: (a) Regarding gains, the Party confirmed that it did not use the default growth rate from table 6.5 of the 2006 IPCC Guidelines (vol. 4, chap. 6). Instead, it used country-specific EFs for growth rate derived by calculating the difference between carbon stocks for lower canopy and carbon stocks for higher canopy (reported in NID table 6.4) and dividing the difference by 20 (i.e. 20 years is the default transition period in the 2006 IPCC Guidelines) in order to obtain annual growth rate. Kenya assumed that growth occurred for the first 20 years. Therefore, the area reported as AD is the accumulated area for the 20 years after conversion; (b) Regarding losses, Kenya explained that country-specific EFs were used, expressed as carbon loss per hectare. These were calculated as the difference between the carbon stocks for higher canopy and lower canopy, assuming that the loss in carbon occurs entirely in the year in which the land-use change takes place. However, the Party informed the TERT that it used accumulated areas for AD, which the TERT considers results in an overestimation of carbon losses in living biomass. The TERT recommends that Kenya improve the transparency of its reporting by clearly explaining in the NID that the EFs and AD used for estimating gains and losses in living biomass were derived using a country-specific method. The TERT also recommends that the Party conduct recalculations for the entire time series by using areas of annual changes as AD (rather than accumulated converted areas) for estimating losses in living biomass, in accordance with the 2006 IPCC Guidelines.
6.L.7	Specified in paragraph 39 of the MPGs 4.A.2 Land converted to forest land – CO_2	The Party provided in its NID table 6.5 the growth rates used to estimate gains in living biomass for each forest type. It also explained in this table that to calculate the change in carbon stocks due to afforestation, it applied the default growth rate values for forests less than 20 years old from the 2006 IPCC Guidelines (vol. 4, chap. 2). However, the TERT noted that the IEFs automatically calculated in CRT 4.A for subcategory 4.A.2.1 cropland converted to forest land are larger values than the IEFs reported in NID table 6.5. During the review, Kenya clarified that the annual growth rates used were derived from country-specific data reported in NID table 6.4. They were calculated as the difference in carbon stocks before and after land conversion, divided by 20. The TERT recommends that Kenya enhance the description in the NID of how it derived country-specific EFs for estimating gains in living biomass under category 4.A.2 land converted to forest land.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
6.L.8	Specified in paragraphs 21, 35, 39 and 47 of the MPGs 4.B.2.1 Forest land converted to cropland – CO_2 4.C.2.1 Forest land converted to grassland – CO_2 4.E.2.1 Forest land converted to settlements – CO_2	Kenya reported in its NID (p.111) that losses in living biomass due to deforestation activities were estimated by assuming, for annual AD, that the rate of conversion remains constant over the whole period in which they occur, and that changes in biomass were instantaneously oxidated. However, the TERT noted that the trends in losses in living biomass reported in the CRTs under the subcategories 4.B.2.1 forest land converted to cropland, 4.C.2.1 forest land converted to grassland and 4.E.2.1 forest land converted to settlements show a gradual, constant annual increase, suggesting that accumulated converted areas were used as AD (which increase over time), contrary to what is described in the NID. During the review, the Party clarified that the losses estimated under land converted to another land-use category were intended to reflect the losses from previous land use and emphasized that the calculations were performed as described in the NID. On further examination, Kenya and the TERT acknowledged that the AD used were in fact accumulated areas over time. The TERT also detected errors in reporting that indicate there may be gaps in the implementation of QC procedures. The TERT recommends that Kenya (1) revise the AD used to calculate losses in living biomass by replacing accumulated converted areas with annual land-use change data, in accordance with the 2006 IPCC Guidelines, and (2) use the revised AD to recalculate emissions from deforestation for the entire time series. The TERT encourages the Party to strengthen its QC procedures, for example by cross-checking results from the IPCC inventory software with those obtained by the Party's own calculations, to ensure the consistency and accuracy of its reporting.
6.L.9	Specified in paragraphs 31 and 45 of the MPGs 4.A Forest land – CO_2 4.B Cropland – CO_2 4.C Grassland – CO_2 4.D Wetlands – CO_2 4.E Settlements – CO_2 4(II) Emissions/removals from drainage and rewetting and other management of organic/mineral soils – N_2O	The Party did not report CO_2 emissions from carbon stock changes in organic soils (CRTs 4.A–4.E) or N_2O emissions from drainage and rewetting and other management of organic/mineral soils (CRT 4(II)) for any land-use categories. In all cases, emissions were reported as "NE". In its NID (p.104), Kenya indicated that the soil types found throughout the country are classified by the IPCC classes "high activity clay soil" and "low activity clay soil", both of which are mineral soils. During the review, the Party explained that it faced challenges in obtaining information on the extent of organic soils in the country and expressed the need for capacity-building to address this challenge. The TERT recommends that Kenya (1) include in the NID references, such as soil maps, to support its assumption that there is little area of organic soils in the country; (2) demonstrate that no land-use categories are applicable in areas under organic soils, for example by overlaying soil maps onto land-use maps; and (3) use the correct notation keys for reporting those emissions.
6.L.10	Specified in paragraphs 45 and 47 of the MPGs 4(III) Direct and indirect N_2O emissions from nitrogen mineralization/immobilization – N_2O	Kenya did not report N_2O emissions from mineralization associated with loss of soil organic matter resulting from changes in land use or management on mineral soils in CRT 4(III). However, the Party reported carbon losses in mineral soils due to the land-use conversions under land converted to other land categories (e.g. land converted to cropland) for which carbon losses are expected to result in N_2O emissions. During the review, Kenya explained that it faced challenges in obtaining the necessary AD. The TERT recommends that Kenya estimate and report N_2O emissions from land-use conversions on mineral soils, for which CO_2 emissions are already estimated in the inventory.
6.L.11	Specified in paragraphs 31, 45, 47 and 51 of the MPGs 4(IV) Biomass burning – CO_2, CH_4 and N_2O (and NO_X, CO and NMVOCs)	The Party did not report non-CO_2 emissions from biomass burning in CRT 4(IV) for any of the land-use categories across the entire the time series, despite the availability of methodologies for estimating such emissions in the 2006 IPCC Guidelines. During the review, Kenya explained that it faced challenges in obtaining the AD necessary for estimating those emissions, particularly AD on the extent,

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		frequency and nature of biomass burning (related to EFs) for the relevant land-use categories. The Party expressed its intention to improve its access to data on fire occurrence and records on the intensity of fires, and also to build national technical expertise to enable a comprehensive estimation of non-CO_2 emissions from biomass burning. Furthermore, Kenya clarified that savannahs in the country are considered as open grassland and it is not possible to separate emissions from prescribed biomass burning in savannah from other emissions from biomass burning occurring in grassland. The TERT recommends that Kenya estimate CH_4 and N_2O emissions from biomass burning (under category 4(IV)), or report the reasons for lack of completeness, for all the relevant land-use categories and report CO_2 emissions in CRT 4(IV) as "IE" (because those emissions are accounted for in carbon stock changes in living biomass and reported in CRTs 4.A–4.F). The TERT encourages Kenya to estimate and report emissions of indirect gases, such as NO_X, CO and NMVOCs in CRT 4.
6.L.12	Specified in paragraphs 45 and 47 of the MPGs 4.G HWP – CO_2	Kenya reported carbon stock changes in HWP as "NE" and did not provide any information in its submission on the reasons for doing so. During the review, the Party explained that it faced challenges in obtaining the AD necessary for estimating the carbon stock changes, particularly AD on the amount of wood harvested domestically and on the volume and uses of imported timber. The TERT recommends that Kenya explore international sources of data to obtain the AD needed and then estimate carbon stock changes in HWP, or report the reasons for lack of completeness in the NID.

Table 7
Areas of improvement of the reporting on greenhouse gas emissions and removals – waste sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
7.W.1	Specified in paragraph 39 of the MPGs 5. General (waste) – CO_2, CH_4 and N_2O	Kenya reported emissions for categories 5.A solid waste disposal, 5.C.1 waste incineration, 5.C.2 open burning of waste and 5.D.1 domestic wastewater. However, the NID does not include detailed information on the AD, EFs and other parameters used to estimate those emissions. During the review, the Party shared with the TERT an Excel spreadsheet containing AD for solid waste disposal and open burning of waste. It also shared the EFs for solid waste disposal. The TERT recommends that Kenya improve the transparency of its reporting by providing in the NID detailed information on the AD, EFs and other parameters used to estimate emissions for all categories of the waste sector, including an explanation of any assumptions made and references to sources of information used in deriving the AD and EFs.
7.W.2	Specified in paragraphs 34–35 of the MPGs 5. General (waste) – CO_2, CH_4 and N_2O	The TERT noted the following discrepancies in the percentages and values reported in the text, figures and tables of the NID as well as between the NID and the CRTs: (a) In the NID (p.116), Kenya reported that, for 2022, total GHG emissions from domestic wastewater, solid waste disposal and waste incineration and open burning of waste contributed 79, 14 and 5 per cent respectively to total waste sector emissions. However, NID figure 7.2 presents the following (some different) values: 77, 14 and 9 per cent respectively. In NID table 7.1, yet another set of percentages is provided: 79, 11 and 7 per cent respectively; (b) In NID table 7.1, Kenya reported that for 2022, total GHG emissions from solid waste disposal (727.4 Gg CO_2 eq), open burning of waste and waste incineration (321.4 Gg CO_2 eq) and domestic wastewater (4,055.2 Gg CO_2 eq) amounted to 5,237.0 Gg CO_2 eq. However, the CRTs present the following values: solid waste disposal (1,097.78 Gg CO_2 eq), waste incineration and open burning of waste (403.55 Gg CO_2 eq) and domestic wastewater treatment (4,055.19 Gg CO_2 eq), amounting to 5,556.52 Gg CO_2 eq;

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		(c) The sum of emissions in NID table 7.1 is 5,104 Gg CO_2 eq and not 5,237 CO_2 eq as reported, indicating issues with the Party's implementation of QC procedures. During the review, the Party acknowledged that these inconsistencies reflect errors in reporting. Regarding the difference between the NID and the CRTs, the Party explained that the CRTs were resubmitted after the NID had been published. Taking into account the flexibility provisions used by the Party, and in line with paragraphs 34–35 of the MPGs, the TERT encourages the Party to develop and/or implement robust QC procedures specific to the waste sector.
7.W.3	Specified in paragraphs 39, 45 and 47 of the MPGs 5.A Solid waste disposal on land – CO_2, CH_4 and N_2O	Kenya reported in its NID (p.115) that 8 Mt solid waste was generated in Kenya in 2022. However, only about 1 Mt of this waste was accounted for in the relevant CRTs (5.A and 5.C). The TERT concluded that approximately 7 Mt waste remains unaccounted for, and no explanation is included in the NID regarding how this unaccounted-for waste was managed. The TERT considers this constitutes a lack of transparency in reporting and a possible issue with completeness, which could lead to an underestimation of emissions. During the review, Kenya explained that it plans to reanalyse all waste streams and consider the improvements necessary for the next submission. The TERT recommends that Kenya enhance the completeness and accuracy of its inventory by ensuring that all AD are included in its estimates of CO_2, CH_4 and N_2O emissions for category 5.A solid waste disposal on land, or, if full accounting is not possible, reporting the reasons for any lack of completeness, including details on methodological or data limitations. The TERT encourages Kenya to improve the transparency of its reporting by providing in the NID a comprehensive explanation of waste flows.
7.W.4	Specified in paragraphs 28 and 43 of the MPGs 5.A Solid waste disposal on land – CH_4	The Party reported in its NID (p.121) that no recalculations were made for category 5.A solid waste disposal on land since previous inventories under the Convention, despite also reporting in the NID (p.121) that it had implemented methodological refinements, including adjustment of waste generation rates and reclassification of solid waste disposal sites, since previous inventories. During the review, the Party provided further information on this matter, providing the TERT with a better understanding of explanations provided in the NID (p.121). For example, in Kenya's second national communication, emissions from the waste sector are reported as 1,205 Gg CO_2 eq for 2000, whereas they are reported as 2,953.3 Gg CO_2 eq for the same year in the NID, which is more than double the previous figure. Such a significant change suggests that the consistency of the time series could be affected if recalculations were not systematically applied across the entire time series. Also during the review, the Party clarified that the statement in the NID indicating no recalculations were made was not accurate, as recalculations were indeed carried out for all applicable waste categories across the time series. The TERT encourages Kenya to report in its NID on any necessary recalculations in its next submission, including explanatory information and justification, along with an indication of the relevant changes and their impact on emission trends.
7.W.5	Specified in paragraphs 32 and 47 of the MPGs 5.B Biological treatment of solid waste – CH_4 and N_2O	In its NID (p.122), Kenya reported that emissions for category 5.B biological treatment of solid waste were not estimated, stating that the AD were "scanty and insignificant". However, the TERT noted that the Party did not provide supporting information or a rationale to substantiate the claim of insignificance. During the review, the Party indicated that it will seek to use approximated AD and default EFs to derive the likely level of emissions for this category. The TERT recommends that Kenya either estimate emissions for this category, for which there are methodologies in the 2006 IPCC Guidelines or provide the information that the categories for which it does not report emissions are insignificant in terms of their likely level of emissions. The TERT notes that Kenya could use approximate default EFs to estimate the likely level of emissions from the biological treatment of solid waste.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
7.W.6	Specified in paragraphs 45 and 47 of the MPGs 5.C.1 Waste incineration – CH_4 and N_2O	Kenya reported in NID table 5.C that CH_4 and N_2O emissions from category 5.C.1 waste incineration were not estimated. However, no explanation was provided for the omissions, despite methodologies and default EFs for estimating these emissions being available in the 2006 IPCC Guidelines. During the review, the Party clarified that it intends to include emission estimates for this source in its next submission. The TERT recommends that Kenya improve the completeness of its reporting by including in its NIR estimates of CH_4 and N_2O emissions for category 5.C.1 waste incineration, or, if estimation is not feasible owing to a lack of data or resources, providing an explanation for the lack of completeness, including information on any methodological or data gaps.

C. Information necessary to track progress in implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

Table 8
Areas of improvement of the reporting on national circumstances and institutional arrangements

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
8.1	Specified in paragraph 60 of the MPGs	Kenya did not report in its BTR information on how its national circumstances affect GHG emissions and removals over time. During the review, Kenya explained that because it did not have a detailed inventory by the time the BTR section on tracking progress in implementing and achieving the NDC was drafted, it was not possible to determine how national circumstances affect GHG emissions and removals over time. Further, Kenya clarified that the NIR and the NDC tracking chapter in the BTR were drafted by different teams, and the NDC tracking team did not have access to the most recent inventory information that would allow it to provide the information required under this reporting provision. The TERT recommends that Kenya provide information on how its national circumstances affect GHG emissions and removals over time by, for example, enhancing coordination between the teams working on different sections of the BTR.
8.2	Specified in paragraph 61 of the MPGs	Kenya reported in its BTR that it enacted its Climate Change Act in 2016 and revised it in 2023, including by integrating the establishment of carbon markets into it, However, the TERT noted that it is not clear what institutional arrangements are in place for tracking ITMOs. During the review, Kenya explained that under the Climate Change Act, roles and responsibilities are assigned to various institutions, including the National Environment Management Authority, which is the designated national authority; multi-stakeholder technical committees, which support the designated national authority in the technical review of carbon market project documents; and the Climate Change Directorate, which advises the Minister of Environment, Climate Change and Forestry on the authorization of projects. The Party also explained that a carbon market regulation, which includes details about the steps required to request authorization for implementation of any project, has been finalized. In addition, work is ongoing on three additional regulations related to carbon trading, carbon registries and non-market approaches. Furthermore, a carbon budget committee has been formed, which is expected to issue a white list of project activities eligible for authorization. The TERT recommends that Kenya include detailed information on the institutional arrangements in place to track ITMOs when describing its institutional arrangements to track progress in implementing and achieving its NDC.
8.3	Specified in paragraph 62 of the MPGs	Kenya provided in its BTR information on the institutional arrangements related to its Climate Change Act. However, it did not provide information on the legal, institutional, administrative and procedural arrangements for domestic

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		implementation, monitoring, reporting, archiving of information and stakeholder engagement related to implementation and achievement of its NDC. During the review, the Party clarified that the legal, institutional, administrative and procedural arrangements are described in the NID. It also clarified that the Climate Change Act includes a provision related to MRV, and that MRV regulations are being developed, including those related to tracking the implementation of mitigation and adaptation actions in the NDC. In addition, Kenya explained that it plans to seek international support for developing and operationalizing a robust digital MRV system. The TERT recommends that Kenya provide in its BTR information on the legal, institutional, administrative and procedural arrangements for domestic implementation, monitoring, reporting, archiving of information and stakeholder engagement related to implementation and achievement of its NDC, covering mitigation and adaptation actions and arrangements related to tracking the implementation of the NDC.

Table 9
Areas of improvement of the description of the nationally determined contribution under Article 4 of the Paris Agreement, including updates

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
9.1	Specified in paragraph 64(a) of the MPGs	In its BTR (section 2.2.1, p.10), Kenya reported that "the NDC sets out both adaptation and mitigation contributions on the condition that it receives international support for implementation". However, under BTR table 2.1, Kenya reported that it will bear 21 per cent of the mitigation cost, with the remaining 79 per cent (USD 14,000 million) dependent on international support. The TERT considered that it is not clear whether the voluntary mitigation commitments of the NDC are fully conditional or only partly. In addition, the level of GHG emission reductions that correspond to the 21 per cent mitigation cost that Kenya will bear is not clear. During the review, Kenya clarified that its NDC includes both unconditional and conditional mitigation commitments. It also clarified that the marginal abatement cost of each mitigation action was not explicitly apportioned in the NDC. Kenya shared a technical analysis report that was prepared in 2020, before its first NDC update. This report includes an analysis of the mitigation potential for all sectors, as well as, for each sector, prioritized actions, the cost of mitigation actions and the percentage of international support required. However, the information was not sufficient to enable the TERT to assess the corresponding emission reductions for the conditional and unconditional components of the NDC. The Party explained that it will work on further analysis and identification of the unconditional emission reduction target by 2030 for the next NDC. The TERT recommends that Kenya improve the description of the target in its NDC by providing clear information on the unconditional and conditional emission reduction components for its 2030 target.

Table 10
Areas of improvement of the reporting of the information necessary to track progress in implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
10.1	Specified in paragraphs 68 and 77(a–b) of the MPGs	In BTR table 2.4, Kenya reported that total GHG emissions in 2021 were 140.667 Mt CO_2 eq, and the TERT noted that the value dropped by 19.4 per cent in 2022, to 113.366 Mt CO_2 eq. The Party did not provide the reason for the steep decline in emissions between 2021 and 2022. Furthermore, the TERT noted that, according to CRT 10, total emissions in 2021 (with LULUCF) were 114.225 Mt CO_2 eq, which is different from the value reported in BTR table 2.4. During the review, the Party clarified that, according to its latest version of the CRTs, the national total emissions for 2021 were 114.225, not 140.667, Mt CO_2 eq, and for 2022, they were 113.183 Mt CO_2 eq. The Party confirmed that the

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		values reported in the BTR were incorrect due to a typographical error. The revised difference between 2021 and 2022 is thus much lower, 1.47 Mt CO_2 eq (about 0.87 per cent). The Party explained that this decline in emissions can be attributed to the decline in livestock populations resulting from the impacts of consecutive droughts between 2020 and 2022. Further, Kenya clarified that the typographical error in the NDC tracking chapter of the BTR mentioned above may have resulted from lack of coordination between the inventory and NDC tracking teams. The TERT recommends that Kenya provide the most recent inventory information for its NDC tracking progress indicator for each reporting year during its NDC implementation period by ensuring coordination between the different teams working on various sections of the BTR.
10.2	Specified in paragraphs 67, 69 and 77(a) of the MPGs	In its BTR (section 2.3.1), Kenya reported that "key data points in the NDC for tracking progress include projected emissions of 122 Mt CO_2 eq by 2022, 112.4 Mt CO_2 eq by 2025, advancing toward the 2030 target of 97 Mt CO_2 eq". However, the TERT noted that as there is no section in the BTR or NDC on the mitigation scenario projections for intermediate data points, there is no information on the reference for the projection values or on the methodology used for preparing them. During the review, Kenya clarified that its NDC is a single-year target, and the intermediate data points provided are not intended to be used as intermediate targets; they are only for internal use. Kenya also clarified that the values are based on projections in a technical analysis report that was developed by the Ministry of Environment, Climate Change and Forestry in 2020 as background information to support the updating of Kenya's NDC, which was being considered at that time. For most sectors, the 'business as usual' scenario projections assumed that historical trends in population, energy demand and economic growth would continue to take place in the future at constant relative growth rates and no major structural changes in the economy would occur. The mitigation scenario projections were based on analyses done for the National Climate Change Action Plan of Kenya 2013–2017 and the second national communication. These analyses examined the mitigation options for the six mitigation sectors and determined priority mitigation actions. Kenya further clarified that it assumed that the 2030 'business as usual' scenario is also applicable to 2022 and 2025; however, the methodology for preparing projections for the mitigation scenario was defined in 2020, and the resultant 'business as usual' values will be revised as part of the process to develop a national carbon budget. Furthermore, the revised 'business as usual' values need to take into consideration any recalculations required to ensure that consistent global warming potential values are used for both the actual and the target GHG emissions. The TERT recommends that Kenya (1) report the revised 2030 'business as usual' emission value, taking into consideration the global warming potential values from the Fifth IPCC Assessment Report, ensuring consistency in the indicator value reported and accordingly enabling effective tracking of the progress towards achieving its target and (2) provide the sources for and an explanation of the additional intermediate data points for the 'business as usual' emissions if the Party decides to report them.
10.3	Specified in paragraphs 62 and 74(b) of the MPGs	Kenya did not provide in its BTR a description of the methodology and/or accounting approach used for constructing its baseline. Specifically, no information is provided on the methodology and model used to develop the 'business as usual' scenario. During the review, Kenya explained that the GHG emission baseline is based on the scenarios for the 'business as usual' emission projections that were established in 2013 for various sectors for the period up until 2030. The projections were developed for each emission category in the inventory, taking into consideration any government plans and policies available at the time, as well as historical trends and projections for each sector's economic growth and technological development. Kenya clarified that because it has no archiving system, it was not able to retrieve any documentation on the methodology used to develop the 'business as usual' scenario beyond the information provided in the technical analysis report. Kenya also clarified that the LEAP model was used for

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		developing the original projections. However, since then, it has faced challenges in accessing the model because it was developed a long time ago. The TERT recommends that Kenya, as applicable, provide a clear description of the methodology and/or accounting approach used for constructing its baseline. To address that recommendation Kenya may consider putting an effective system in place for archiving information on any models (e.g. LEAP) and assumptions used for developing emission projections so that it can be accessed when preparing future reports.
10.4	Specified in paragraph 75(e) of the MPGs	Kenya did not provide in its BTR clear and consistent information on the methodologies used to estimate mitigation co-benefits of adaptation actions and/or economic diversification plans. Specifically, the TERT noted that BTR table 2.5 mentions that "any methodologies used to account for mitigation benefits of adaptation actions and/or economic diversification plans" are "not applicable". However, in section 3.1.1 of the updated NDC (2020), Kenya reported that mitigation co-benefits from adaptation actions will be considered. The reason behind the apparent inconsistency between the BTR and the NDC was not transparently addressed in the BTR. During the review, Kenya explained that the reference to including mitigation co-benefits of adaptation actions in the updated NDC reflects its forward-looking commitment to developing methodologies for quantifying those co-benefits as implementation of adaptation actions progresses. The "not applicable" noted in the BTR indicates that at the time of reporting, specific methodologies for quantifying the co-benefits had not yet been developed. The TERT encourages Kenya to clearly report on the methodologies used to estimate mitigation co-benefits of adaptation actions and/or economic diversification plans, as information is available and as applicable, or, if the Party deems information is not available or applicable, clearly describe in the BTR that this is the case.
10.5	Specified in paragraph 75(i) of the MPGs	Kenya reported in its BTR information on the conditions relevant to the achievement of its NDC, namely the availability of international support in the form of finance, technology development and transfer, and capacity-building. Kenya also reported that it will consider under the conditions and assumptions relevant to the achievement of its NDC any climate finance in the form of loans as part of its domestic contribution. However, in the corresponding CTF table 3, it reported "NA" for any conditions and assumptions relevant to the achievement of the NDC. The reason behind the inconsistency was not clear to the TERT. During the review, Kenya explained that the inconsistency resulted from having overlooked QC/QA activities for its reporting owing to the limited time available to submit its BTR on time. The TERT recommends that Kenya enhance the transparency of its reporting by providing information on the conditions and assumptions relevant to the achievement of its NDC, as information is available and as applicable, or, if the Party deems information is not available or applicable, clearly describing in the BTR that this is the case.
10.6	Specified in paragraph 77(c) of the MPGs	In BTR table 2.4, Kenya provided its structured summary containing the elements required in accordance with paragraph 77(c) of the MPGs. However, the TERT noted that the values provided are incorrectly reported, lower by a magnitude of 1,000. In addition, the values for 2021 seem to be incorrect according to information provided by the Party during the review (see ID# 10.1 above). Moreover, the TERT noted that according to the MPGs, the contribution from the LULUCF sector for each year of the target period does need to be reported, as it is included in the national economy-wide target. During the review, Kenya explained that the typographical errors may have resulted from lack of coordination between the inventory and NDC tracking teams. The TERT recommends that Kenya consider the contribution from the LULUCF sector for each year of the target period or target year as "NA" because it is included in the national economy-wide target.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
10.7	Specified in paragraph 77(d) of the MPGs	In BTR table 2.4 the value given for the annual level of anthropogenic emissions by sources and removals by sinks covered by the NDC and subject to cooperative approaches is different from the total GHG emissions of the Party. Specifically, "national GHG emissions excluding LULUCF" was reported in table 2.4 as the annual emissions affected by cooperative approaches, despite the NDC target being an economy-wide one. It was not clear to the TERT whether the LULUCF sector is excluded from Kenya's planned cooperative approaches. If not, the intention behind using such reference to the actual GHG values covered by the NDC was not clear to the TERT. During the review, Kenya explained that the LULUCF sector is not excluded from its planned participation in cooperative approaches. However, most of the activities in the inventory are in REDD+ and voluntary carbon markets. Kenya clarified that the values reported in the table are intended to define or indicate the potential of the activity and not exclusion of the sector. Following further discussion, Kenya clarified that while it considers that some of the LULUCF activities participating in voluntary carbon markets can still acquire a letter of authorization and be traded as ITMOs, it is preferable to exclude the sector until the accuracy of the corresponding inventory calculations are improved. Kenya indicated that it is already working on enhancing the quality of the LULUCF inventory, and accordingly, exclusion of the sector can be soon revised. The TERT recommends that Kenya provide in the BTR a clear explanation regarding its participation in cooperative approaches, specifically, how that participation affects the reported annual level of anthropogenic emissions by sources and removals by sinks covered by the NDC on an annual basis.
10.8	Specified in paragraphs 78 and 90 of the MPGs	Kenya's updated NDC (2020) includes adaptation actions resulting in mitigation co-benefits. However, Kenya did not provide in the BTR the information necessary to track progress on the implementation and achievement of the domestic PaMs implemented to address the social and economic consequences of response measures (in accordance with para. 78 of the MPGs). Specifically, it did not report any information on the sectors and activities associated with response measures, the corresponding social and economic consequences of the response measures, challenges faced in addressing the consequences, and actions to address the consequences. The reason for not reporting such information was not clear in the BTR, and Kenya reported in its updated NDC (2020) that such social and economic consequences were analysed and included in its national adaptation plan. During the review, Kenya explained that it has not yet fully defined the specific response measures that may have potential negative impacts on the economy. It has not yet conducted a comprehensive analysis of the potential socioeconomic consequences of such measures and mitigation actions or associated challenges. Kenya provided the example that its coffee exports have been impacted by the European Green Deal. A simple analysis was done for the response measures in 2021; however, that analysis was not based on a detailed sectoral assessment. In addition, the Party explained that the analysis included in the national adaptation plan was only a high-level one. Kenya clarified that, among other things, it requires capacity-building support to enhance methodological frameworks for identifying and assessing the adverse impacts of climate change response measures and to enhance technical expertise in modelling socioeconomic risks. The TERT recommends that Kenya provide the information necessary to track progress in implementing and achieving domestic PaMs implemented to address the social and economic consequences of response measures, including by defining those sectors and activities associated with response measures and identifying the challenges and barriers to and actions for addressing such consequences.
10.9	Specified in paragraph 79 of the MPGs	Kenya did not report any information required by paragraphs 74(b), 75(e) and 78 of the MPGs in the CTF tables (see ID#s 10.3, 10.4 and 10.8 above). The TERT recommends that Kenya, as applicable, report in the CTF tables the methodologies used for baseline construction, methodologies used for estimating the mitigation co-benefits of adaptation actions and/or economic diversification plans, and information necessary to track progress on the implementation and

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		achievement of the domestic PaMs implemented to address the social and economic consequences of response measures.

Table 11

Areas of improvement of the reporting on mitigation policies and measures, actions and plans, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans, related to implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
11.1	Specified in paragraph 82(b), (e) and (h) of the MPGs	Kenya reported in BTR table 2.6 information on the Kenya Climate Smart Agriculture Strategy 2017–2026, which is a mitigation measure under the agriculture sector. It reported that one of the objectives of the Strategy is to minimize GHG emissions from agricultural farming systems. However, the TERT noted that the mitigation actions that can minimize emissions from agricultural farming systems are not clearly described. The TERT also noted that while the Party reported the starting year of implementation of the Strategy as 2017, it is not clear whether implementation is ongoing and what steps have been taken so far. Furthermore, Kenya reported in BTR table 2.6 information on its dairy NAMA, describing that it focuses on practices that result in lowering emissions. However, the TERT noted that such practices are not clearly identified. In addition, while the action is reported as planned, it is not clear whether its implementation is pending finance and whether there is an expected starting year. During the review, the Party provided the following clarifications: (a) Kenya Climate Smart Agriculture Strategy 2017–2026: Kenya explained that minimizing emissions from agricultural farming systems can be achieved by reducing emissions from livestock (manure management and enteric fermentation) and from rice production systems. Kenya clarified that implementation of the Strategy is ongoing; (b) Dairy NAMA: Kenya explained that the action focuses on implementing climate-smart livestock practices to reduce CH_4 and N_2O emissions from dairy production. These practices include adoption of improved feeds and use of high-quality forage and balanced ratios to reduce enteric fermentation, and improved manure management via promotion of anaerobic digesters for biogas production. Kenya clarified that the action is indicated as planned because it is anticipating funding from the GCF. The TERT recommends that Kenya provide, to the extent possible, in tabular format more information regarding the Kenya Climate Smart Agriculture Strategy and the dairy NAMA, including a description of the specific mitigation actions (para. 82(b) of the MPGs), their implementation status (para. 82(e) of the MPGs) and starting year (para. 82(h) of the MPGs), or, if the Party deems it not possible to report consistently with paragraph 82 of the MPGs, provide that information in the BTR.
11.2	Specified in paragraphs 82(b) and (e) and 84 of the MPGs	Kenya reported in BTR table 2.6 information on the Towards Ending Drought Emergencies: Ecosystem Based Adaptation in Kenya's Arid and Semi-Arid Rangelands project and on the National Agricultural and Rural Inclusive Growth Project, which are two measures under the agriculture sector. The TERT noted that these are adaptation actions, and their mitigation co-benefits were not reported in the BTR or CTF 5. In addition, while the Party reported the National Agricultural and Rural Inclusive Growth Project as implemented, with the starting year of 2017, the end year was not indicated. During the review, Kenya provided the following clarifications: (a) Towards Ending Drought Emergencies: Ecosystem Based Adaptation in Kenya's Arid and Semi-Arid Rangelands project: Kenya explained that the main objective of this GCF-funded project is to support landscape restoration within the drought feeding areas for pastoralist communities. Through its intervention of community-based restoration and protection, the project has supported reseeding and grazing plans of rangeland degraded from overgrazing whose recovery rates had been depleted owing to climate-induced droughts and flash floods and resultant increase in the presence of alien invasive plant species

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		that have reduced grassland productivity. The action has also supported reforestation efforts with agroforestry species. The Party acknowledged that these actions under this project have led to mitigation co-benefits from trees and grass planted on 90,233 ha land under climate-resilient practices (sustainable land management, including conservation agriculture and integrated natural management, cumulative 2016–2024); (b) National Agricultural and Rural Inclusive Growth Project: Kenya explained that this project was not specifically designed to address the climate actions under the Kenya Climate Smart Agriculture Strategy 2017–2026. Notwithstanding this fact, some of the actions implemented under the project entailed technologies, innovations and management practices, for both crops and livestock, that addressed both adaptation and mitigation challenges, such as conservation agriculture, sustainable land management (soil and water conservation), agroforestry practices, feed production and management, and manure management. The Party also explained that the project was completed in 2022 and a new initiative was created, the National Agricultural Value Chain Development Project, which is a development initiative with elements of climate action for both crop and livestock subsectors. The TERT recommends that Kenya enhance the transparency of its reporting by providing in the BTR, to the extent possible, additional information on the Towards Ending Drought Emergencies: Ecosystem Based Adaptation in Kenya's Arid and Semi-Arid Rangelands project and the National Agricultural and Rural Inclusive Growth Project, including their mitigation co-benefits (paras. 82(b) and 84 of the MPGs) and clear information regarding paragraph 82(e) of the MPGs, or, if the Party deems it not possible to report consistently with paragraph 82 of the MPGs, describing why this is the case in the BTR.
11.3	Specified in paragraph 82(e) and (i) of the MPGs	Kenya provided in BTR table 2.6 information on the Kenya Climate Smart Agriculture Project. However, the TERT noted that the implementing entity for this action is not reported. In addition, while it is reported that the action is already implemented, and the starting year was 2017, the end year is not reported. During the review, Kenya explained that the Project was implemented as a specific climate action in line with the Kenya Climate Smart Agriculture Strategy 2017–2026 through the State Department for Agriculture (Crops), which is part of the Ministry of Agriculture and Livestock Development. Kenya clarified that the Project was completed in 2022. The TERT recommends that Kenya provide, to the extent possible, information, in tabular format, on the implementing entity of the Kenya Climate Smart Agriculture Project (para. 82(i) of the MPGs) and more detailed information on the status of the action, particularly its year of completion (para. 82(e) of the MPGs).
11.4	Specified in paragraph 82(e) of the MPGs	Regarding the transport sector, Kenya included in BTR table 2.8 information on the transfer of freight from road to rail between Nairobi and Mombasa, a measure under the energy (transport) sector. The starting year was reported as 2018. The TERT noted that while the status of the measure was reported as "adopted", it is not clear whether there has been any activity for this project since 2018 (e.g. a new phase being added). Kenya also reported in BTR table 2.9 information on the National REDD+ Strategy 2021, a measure under the LULUCF sector. The measure is reported as planned; however, the status of the action and the barriers Kenya faces in its implementation were not reported. During the review, Kenya explained that a new phase has been added to the Nairobi–Mombasa road to rail project, providing an extension of rail to Naivasha town. A third phase is also being planned. Regarding the National REDD+ Strategy, the Party explained that it was developed and finalized in 2021; however, its implementation is pending because national-level REDD+ implementation in Kenya has not yet been operationalized. Following a discussion on the matter, Kenya noted that while there has been some delay, significant progress has been also achieved. Kenya has been working on reviewing its Forest Conservation and Management Act to align with the Climate Change Act 2023. In addition, Kenya has developed a forest policy framework, which is now in place. A new methodology for estimating emissions has been adopted, in addition to a

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		new data set that will help the country determine its forest reference level. Kenya clarified that several capacity enhancements are needed for national-level REDD+ implementation, including developing site-specific tracking of implemented REDD+ activities and training materials on relevant REDD+ safeguards that can be used by activity implementers and communities. The TERT recommends that Kenya provide, to the extent possible, complete and transparent information, in tabular format, on the status of the mitigation actions transfer of freight from road to rail between Nairobi and Mombasa and the National REDD+ Strategy 2021, in line with paragraph 82 of the MPGs.
11.5	Specified in paragraph 82(b), (d), (e), (h) and (i) of the MPGs	Kenya reported in textual format in the BTR (section 2.4.5) information on mitigation actions for the IPPU sector, namely that it has established targets for energy efficiency, water and wastewater management, and circular economy. However, the TERT noted that no transparent information was included on whether some relevant projects have been already implemented and whether any results have been achieved. During the review, Kenya explained that it did not have access to further data to complement its reporting because it faced challenges acquiring information from the private sector. While energy efficiency data could in principle be acquired in the future from the Ministry of Energy and Petroleum (as there is a law mandating industrial energy audits), data on water efficiency and circular economy would be more problematic to obtain. Kenya clarified that industrial manufacturers need additional technical support and capacity-building on identifying and implementing resource efficiency and circular economy mitigation actions. The TERT recommends that Kenya provide, to the extent possible, complete and transparent information, in tabular format, for the resource efficiency and circular economy mitigation actions of the IPPU sector, covering description, type of instrument, status, starting year of implementation and implementing entities, or, if the Party deems it not possible to report consistently with paragraph 82 of the MPGs, the TERT encourages the Party to describe in the BTR why this is the case.
11.6	Specified in paragraph 82(b) of the MPGs	Kenya reported in BTR table 2.10 information on the waste measure Sustainable Waste Management Act 2022. In the BTR (p.37), the Party mentioned that the extended producer responsibility regulations 2024 were developed to operationalize the National Sustainable Waste Management Policy 2021 and Sustainable Waste Management Act 2022. However, no further details were provided to transparently describe the measure, and it is not clear whether tangible outputs have resulted from operationalizing the Policy and the Act. During the review, Kenya explained that the Sustainable Waste Management (Extended Producer Responsibility) Regulations, Legal Notice 176 of 2024, were published on 24 November 2024, with a notice period of six months before enforcement came into effect on 4 May 2025. There are four producer responsibility organizations addressing various waste streams supporting extended producer responsibility: two organizations for non-hazardous packing (Packaging Producer Responsibility Organization, Kenya Extended Producer Responsibility Organization), one for electric and electronic waste (Electronic Waste Producer Responsibility Organisation of Kenya) and one for hazardous packaging (Hazardous Waste Producer Responsibility Organization of Kenya). Kenya clarified that waste management regulations were in place as far back as 2006, although they had some gaps; accordingly, the plan was to have the National Sustainable Waste Management Policy 2021 followed by the Sustainable Waste Management Act 2022. While the extended producer responsibility regulations of 2024 are partly for operationalizing the Policy and the Act, additional regulations are under development. The TERT recommends that Kenya provide, to the extent possible, a complete and transparent description of the mitigation actions for the waste sector, specifically the relationship between the Sustainable Waste Management Policy 2021, the National Sustainable Waste Management Act 2022 and the extended producer responsibility regulations 2024.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
11.7	Specified in paragraphs 6 and 85 of the MPGs	Kenya reported in BTR table 2.7 expected and achieved emission reductions for the energy sector measure Least Cost Power Development Plan, reporting the expected emission reduction as 904.316 kt CO_2 eq and the achieved emission reduction as 18,000 kt CO_2 eq. However, the TERT noted that the year(s) to which the emission reductions correspond was not reported and the significant difference between the expected and achieved emission reduction was not explained. The TERT also noted that Kenya has applied flexibility provisions with respect to its reporting of information on expected and achieved GHG emission reductions for its actions and PaMs. During the review, Kenya clarified that there was a typographical error in BTR table 2.7, and that 18,000 kt CO_2 eq is the projected reduction. Kenya explained that the inventory was used to track this action because the action drives emission reductions under electricity generation, which is how the 904.316 kt CO_2 eq value was calculated, representing progress as at 2022. Following a discussion with the Party on this matter during the review, the TERT concluded that the 904.316 kt CO_2 eq value corresponds to GHG emissions from power generation in 2022 and not the emission reduction from the mitigation action. Kenya indicated its need for national capacity-building in estimating GHG emission reductions for the various mitigation actions. The TERT encourages Kenya to report, to the extent possible and within the estimated time frame for improvement specified by the Party, on the expected and achieved emission reductions for its actions and PaMs by establishing effective coordination between the inventory team and the projections team to ensure consistent reporting between the BTR and the NIR.
11.8	Specified in paragraphs 6 and 85 of the MPGs	Kenya applied flexibility with respect to reporting of information on expected and achieved GHG emission reductions for its actions and PaMs. It presented capacity constraints in general terms rather than specific to each mitigation action. During the review, Kenya explained that for many of the reported actions, the potential emission reductions were not estimated at the time projects ended owing to inadequate institutional and technical capacity. For the forestry projects, for example, while the country has established a national forest monitoring system for tracking GHG emissions from the LULUCF sector, methodologies for assessing tree cover and for tracking specific locations where trees have been planted are still under development. This represents an area where additional technical and financial capacity-building is needed. Kenya explained that the GCF-funded project Towards Ending Drought Emergencies: Ecosystem Based Adaptation in Kenya's Arid and Semi-Arid Rangelands is implemented globally and the estimated country-level GHG emission reductions were not available owing to gaps in institutional and technical capacity. The TERT encourages Kenya to report, to the extent possible and within the estimated time frame for improvement specified by the Party, expected and achieved GHG emission reductions for its actions and PaMs, as relevant, providing a relevant explanation for the specific cases where there are no expected or achieved GHG emission reductions.
11.9	Specified in paragraph 86 of the MPGs	Kenya reported the actual and estimated emission reductions for the measure Least Cost Power Development Plan. However, the methodology used for estimation was not reported. During the review, Kenya explained that it faces challenges with regard to its institutional arrangements and technical capacity constraints. Capacity-building is accordingly required. The TERT encourages Kenya to describe, to the extent possible, the methodologies and assumptions used to estimate GHG emission reductions or removals, or to describe the capacity constraints that prevent it from doing so in the BTR.
11.10	Specified in paragraph 88 of the MPGs	Kenya did not identify its actions and PaMs that influence GHG emissions from international transport.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		During the review, Kenya explained that it faces challenges in collecting the relevant data, and sector-specific MRV arrangements for mitigation actions for international transport are yet to be developed. The TERT encourages Kenya to include in its BTR information on its actions and PaMs that influence GHG emissions from international transport.
11.11	Specified in paragraph 89 of the MPGs	Kenya did not provide information in its BTR about how its actions and PaMs are modifying longer-term trends in GHG emissions and removals. During the review, Kenya explained that it faces challenges in reporting on this provision because it is closely related to developing projections, which is an area that it needs flexibility in, in the light of its capacity. The TERT encourages Kenya to provide, to the extent possible and within the estimated time frame for improvement specified by the Party for projections, information about how its actions and PaMs are modifying longer-term trends in GHG emissions and removals.

Table 12
Areas of improvement of the summary of greenhouse gas emissions and removals

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
12.1	Specified in paragraph 91 of the MPGs	Kenya provided a stand-alone NIR. However, Kenya's summary of its GHG inventory provided in the BTR (chap. 1) does not contain information for 2021. During the review, Kenya explained that while the results for 2021 are available in the CRTs, it opted not to include the summary results for all years in the text of the BTR to avoid a lengthy table. The TERT recommends that Kenya provide in the BTR a summary, in tabular format, of its GHG emissions and removals for each of the reporting years corresponding to the Party's most recent NIR.

Table 13
Areas of improvement of the projections of greenhouse gas emissions and removals

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

Table 14
Areas of improvement of other information relevant to tracking progress in implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

II. Capacity-building needs[3] identified by the Party and by the technical expert review team in consultation with the Party during the technical expert review of its first biennial transparency report

2. Table 15 presents capacity-building needs identified by the Party and by the TERT in consultation with the Party during the technical expert review of its BTR1.

Table 15
Capacity-building needs identified in consultation with the Party

ID#	*Reporting requirement*	*Area in which capacity-building is needed*
General reporting		

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

ID#	*Reporting requirement*	*Area in which capacity-building is needed*
NA	NA	No capacity-building needs identified
NIR – general		
2.G_CBN.1	Specified in paragraph 18 of the MPGs	Strengthening the national inventory arrangements related to the capacity of the GHG inventory team to ensure consistent implementation of the general reporting requirements of the MPGs and for each sector
2.G_CBN.2	Specified in paragraph 19(c) of the MPGs	Establishing and operationalizing a system for documenting and archiving data for the continued estimation, compilation, and timely reporting of NIRs in accordance with the MPGs
2.G_CBN.3[a]	Specified in paragraph 29 of the MPGs	Preparing an uncertainty assessment, including, at a minimum, a qualitative discussion of uncertainty for key categories applying the 2006 IPCC Guidelines, but where possible, a quantitative estimate of uncertainty for all source and sink categories of the GHG inventory
2.G_CBN.4[a]	Specified in paragraphs 34–35 of the MPGs	Developing an inventory QA/QC plan, identifying the inventory agency responsible for implementing QA/QC procedures and implementing the plan
2.G_CBN.5	Specified in paragraph 32 of the MPGs	Preparing an assessment of the insignificance of categories across the entire inventory in accordance with paragraph 32 of the MPGs
NIR – energy sector		
3.E_CBN.1	Specified in paragraph 54 of the MPGs	Enhancing the expertise and technology available to account for fugitive emissions from fuel handling
3.E_CBN.2	Specified in paragraph 53 of the MPGs	Enhancing the capacity of energy sector experts and waterborne navigation data providers to collect and disaggregate data for domestic and international waterborne navigation
3.E_CBN.3	Specified in paragraph 54 of the MPGs	Building the technical capacity of experts and data providers to disaggregate data on energy use and non-energy use of fuels, including of data providers to develop appropriate data-collection tools
NIR – IPPU sector		
4.I_CBN.1	Specified in paragraphs 47–48 of the MPGs	Strengthening the capacity of government and private sector actors to collect sufficient data for estimating and reporting emission estimates for all categories in the IPPU sector under which emissions occur in Kenya and for which methodologies are provided in the 2006 IPCC Guidelines, for at least CO_2, CH_4 and N_2O
4.I_CBN.2[a]	Specified in paragraphs 6, 47, 48 and 49 of the MPGs	Preparing emission estimates for F-gases
4.I_CBN.3	Specified in paragraphs 20–24 of the MPGs	Enhancing national capacity to develop country-specific EFs for categories in the IPPU sector to enable reporting using higher-tier methodologies, where relevant, in accordance with the 2006 IPCC Guidelines
NIR – agriculture sector		
5.A_CBN.1	Specified in paragraphs 26–27 of the MPGs	Enhancing the capacity of regional livestock experts to apply IPCC data gap-filling techniques and access data analysis tools, and enhancing national capacity to develop software and tools for improving systematic data collection, data cleaning, conducting QC at the county level and aggregating data at the national level
5.A_CBN.2	Specified in paragraph 39 of the MPGs	Improving the quality and consistency of AD for manure management systems by developing a standardized classification system that aligns with the 2006 IPCC Guidelines and conducting coordinated livestock surveys across all significant livestock types (e.g. dairy cattle, non-dairy cattle, camels)

ID#	*Reporting requirement*	*Area in which capacity-building is needed*
5.A_CBN.3	Specified in paragraphs 39–40 of the MPGs	Providing support for using reporting tools to ensure all subcategories under category 3.D direct and indirect N_2O emissions from agricultural soils are covered
5.A_CBN.4	Specified in paragraphs 39 and 44 of the MPGs	Harmonizing data collection, improving yield-to-area estimation methods, and strengthening technical capacity to accurately and transparently report rice cultivation AD
NIR – LULUCF sector		
6.L_CBN.1	Specified in paragraphs 20, 21, 22, 35 and 47 of the MPGs	Inputting into the IPCC inventory software the AD used to estimate losses in living biomass and strengthening QC measures to ensure the estimates generated by the software match the Party's calculations
6.L_CBN.2	Specified in paragraph 47 of the MPGs	Enhancing the collection of the AD necessary to estimate emissions for category 4(IV) biomass burning for all relevant land-use categories, such as AD on the extent and frequency of fire events
6.L_CBN.3	Specified in paragraphs 45 and 47 of the MPGs	Collecting soil maps with land-use overlays to support the assumption that there are few organic soils and no agricultural activities occurring on such soils in Kenya
6.L_CBN.4	Specified in paragraphs 20, 21 and 40 of the MPGs	Understanding how to input data on land-use matrices into the IPCC inventory software and strengthening QC measures appropriate to the land representation approach adopted by the Party
6.L_CBN.5	Specified in paragraphs 26, 27 and 47 of the MPGs	Enhancing the collection of data, preferably from 1971 onward, that will enable gaps in areas of land-use change to be addressed in order to estimate carbon stock changes due to land-use conversion in mineral soils for the entire time series
6.L_CBN.6	Specified in paragraph 47of the MPGs	Inputting data in the IPCC inventory software to report emissions and removals at the subcategory level for each land-use category in order to improve the transparency of reporting
6.L_CBN.7	Specified in paragraph 47 of the MPGs	Enhancing the collection of data on HWP to enable estimation of carbon stock changes for this mandatory pool
6.L_CBN.8	Specified in paragraphs 21 and 24 of the MPGs	Conducting studies on mineral soils to generate country-specific data that can be used to accurately estimate carbon stock changes in mineral soils
NIR – waste sector		
7.W_CBN.1	Specified in paragraphs 21 and 47 of the MPGs	Strengthening the AD collection system for the waste sector as a whole
7.W_CBN.2[a]	Specified in paragraph 35 of the MPGs	Enhancing QC/QA procedures specific to waste sector categories
Information necessary to track progress in implementing and achieving the NDC under Article 4 of the Paris Agreement		
8_CBN.1	Specified in paragraph 60 of the MPGs	Conducting in-depth analyses of trends in GHG emissions over the time series and identifying the drivers of emissions and removals
8_CBN.2	Specified in paragraphs 61 and 77(d) of the MPGs	Enhancing national capacity, including of multi-stakeholder technical committees, climate change units within ministries, departments and agencies, as well as private sector actors and project developers, to participate in cooperative approaches and to identify the sectors for which cooperative approaches are suitable
8_CBN.3	Specified in paragraphs 62 and 81 of the MPGs	Developing a MRV system for tracking NDC implementation, including establishing legal, institutional and procedural arrangements
10_CBN.1	Specified in paragraph 75(e) of the MPGs	Developing methodologies for estimating the mitigation co-benefits of adaptation actions and/or economic diversification plan

ID#	*Reporting requirement*	*Area in which capacity-building is needed*
10_CBN.2	Specified in paragraphs 78 and 90 of the MPGs	Developing methodological frameworks for identifying and assessing the adverse impacts of climate response measures, including modelling the corresponding socioeconomic risks
11_CBN.1	Specified in paragraphs 82 and 84 of the MPGs	Enhancing national capacity to establish site-specific tracking of implemented REDD+ actions, and developing comprehensive training materials on relevant REDD+ safeguards that can be used by activity implementers and communities
11_CBN.2	Specified in paragraphs 82 and 84 of the MPGs	Developing a robust MRV system for the industrial sector, including any legal arrangements required to ensure data confidentiality
11_CBN.3	Specified in paragraphs 82 and 84 of the MPGs	Enhancing the capacity of the industrial sector to identify, implement and effectively monitor resource efficiency and circular economy mitigation actions
11_CBN.4[a]	Specified in paragraphs 85–86 of the MPGs	Estimating achieved and expected GHG emission reductions for mitigation actions in all sectors
11_CBN.5	Specified in paragraph 88 of the MPGs	Developing robust, specific MRV arrangements for international aviation and navigation
11_CBN.6[a]	Specified in paragraphs 89 and 92 of the MPGs	Developing projections for all GHG emissions and removals for the ‘with measures’, ‘with additional measures’ and ‘without measures’ scenarios

[a] Capacity-building need identified by the TERT in consultation with the Party relating to the flexibilities applied by it as per the MPGs.

Annex

Documents and information used during the review

A. Reference documents

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

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

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"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.

B. Additional information provided by the Party

Responses to questions during the review were received from Fredrick Ouma (State Department for Environment and Climate Change), including additional material. The following references were provided by Kenya and may not conform to UNFCCC editorial style as some have been reproduced as received:

Ministry of Agriculture, Livestock and Fisheries, State Department for Livestock Directorate of Livestock Production. 2019. *Inventory of GHG emissions from dairy cattle in Kenya 1995-2017*.

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27 Feb-1 March 2023, *Report of the Sixth Kenya National Climate Outlook Forum For March – April – May (Mam) 2023 Season,* Boma Hotel, Nairobi.

White, David. 2018. *Feasibility study on the use of sustainable aviation fuels. ICAO-European Union assistance project: capacity building for C)2 mitigation from international aviation*. ICAO