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## **Technical analysis of the first biennial update report of Mali submitted on 28 August 2023**

### **Summary report by the team of technical experts**

#### *Summary*

According to paragraph 41(a) of decision 2/CP.17, Parties not included in Annex I to the Convention, consistently with their capabilities and the level of support provided for reporting, were to submit their first biennial update report by December 2014. As mandated, the least developed country Parties and small island developing States may submit biennial update reports at their discretion. This summary report presents the results of the technical analysis of the first biennial update report of Mali, conducted by a team of technical experts in accordance with the modalities and procedures contained in the annex to decision 20/CP.19.



## Abbreviations and acronyms

|   |  |
|---|--|
| 2006 IPCC Guidelines  | <i>2006 IPCC Guidelines for National Greenhouse Gas Inventories</i>  |
| AD  | activity data  |
| AFOLU   | agriculture, forestry and other land use   |
| AR  | Assessment Report of the Intergovernmental Panel on Climate Change   |
| BUR   | biennial update report   |
| CH <sub>4</sub>   | methane  |
| CO <sub>2</sub>   | carbon dioxide   |
| CO <sub>2</sub> eq  | carbon dioxide equivalent  |
| EF  | emission factor  |
| ETF   | enhanced transparency framework under the Paris Agreement  |
| GEF   | Global Environment Facility  |
| GHG   | greenhouse gas   |
| GWP   | global warming potential   |
| HFC   | hydrofluorocarbon  |
| HWP   | harvested wood products  |
| ICA   | international consultation and analysis  |
| IPCC  | Intergovernmental Panel on Climate Change  |
| IPCC good practice guidance   | <i>Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories</i>                    |
| IPCC good practice guidance for LULUCF                                | <i>Good Practice Guidance for Land Use, Land-Use Change and Forestry</i>   |
| IPPU  | industrial processes and product use   |
| LULUCF  | land use, land-use change and forestry   |
| MRV   | measurement, reporting and verification  |
| N <sub>2</sub> O  | nitrous oxide  |
| NA  | not applicable   |
| NC  | national communication   |
| NDC   | nationally determined contribution   |
| NE  | not estimated  |
| non-Annex I Party   | Party not included in Annex I to the Convention  |
| PFC   | perfluorocarbon  |
| Revised 1996 IPCC Guidelines  | <i>Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories</i>  |
| SF <sub>6</sub>   | sulfur hexafluoride  |
| TTE   | team of technical experts  |
| UNFCCC guidelines for the preparation of NCs from non-Annex I Parties | “Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention” |
| UNFCCC reporting guidelines on BURs                                   | “UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention”                |

## **I. Introduction and process overview**

### **A. Introduction**

1. The process of ICA consists of two steps: a technical analysis of the submitted BUR and a facilitative sharing of views under the Subsidiary Body for Implementation, resulting in a summary report and a record respectively.
2. According to paragraph 41(a) of decision 2/CP.17, non-Annex I Parties, consistently with their capabilities and the level of support provided for reporting, were to submit their first BUR by December 2014. The least developed countries and small island developing States may submit at their discretion.
3. Further, according to paragraph 58(a) of the same decision, the first round of ICA is to commence for non-Annex I Parties within six months of the submission of the Parties' first BUR. The frequency of developing country Parties' participation in subsequent rounds of ICA, depending on their respective capabilities and national circumstances, and the special flexibility for small island developing States and the least developed country Parties, will be determined by the frequency of the submission of BURs.
4. This summary report presents the results of the technical analysis of the first BUR of Mali, undertaken by a TTE in accordance with the provisions on the composition, modalities and procedures of the TTE under ICA contained in the annex to decision 20/CP.19.

### **B. Process overview**

5. In accordance with the mandate referred to in paragraph 2 above, Mali submitted its first BUR on 28 August 2023 as a stand-alone update report.
6. The technical analysis of Mali's BUR was conducted from 14 to 18 October 2024 in Bonn and was undertaken by the following TTE, drawn from the UNFCCC roster of experts on the basis of the criteria defined in paragraphs 2–6 of the annex to decision 20/CP.19: Yoisy Castillo (Panama), Reitumetse Molotsoane (South Africa), Sekai Ngarize (member of the Consultative Group of Experts from Zimbabwe) and Guilhem Pouillevet (France). Sekai Ngarize and Guilhem Pouillevet were the co-leads. The technical analysis was coordinated by Jeeyoon Jung (secretariat).
7. During the technical analysis, in addition to the written exchange, in the virtual team room, to provide technical clarifications on the information reported in the BUR, the TTE and Mali engaged in consultation<sup>1</sup> on the identification of capacity-building needs for preparing BURs and participating in ICA. Following the technical analysis of Mali's first BUR, the TTE prepared and shared a draft summary report with Mali on 10 February 2025 for its review and comment. Mali, in turn, provided its feedback on the draft summary report on 4 April 2025.
8. The TTE finalized the summary report in consultation with the Party on 4 April 2025.

## **II. Technical analysis of the biennial update report**

### **A. Scope of the technical analysis**

9. The scope of the technical analysis is outlined in paragraph 15 of the annex to decision 20/CP.19, according to which the technical analysis aims to, without engaging in a discussion on the appropriateness of the actions, increase the transparency of mitigation actions and their effects and shall entail the following:

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<sup>1</sup> The consultation was conducted via videoconferencing.

(a) The identification of the extent to which the elements of information listed in paragraph 3(a) of the ICA modalities and guidelines<sup>2</sup> have been included in the BUR of the Party concerned (see chap. II.B below);

(b) A technical analysis of the information reported in the BUR, specified in the UNFCCC reporting guidelines on BURs,<sup>3</sup> and any additional technical information provided by the Party concerned (see chap. II.C below);

(c) The identification, in consultation with the Party concerned, of capacity-building needs related to the facilitation of reporting in accordance with the UNFCCC reporting guidelines on BURs and to participation in ICA in accordance with the ICA modalities and guidelines, taking into account Article 4, paragraph 3, of the Convention (see chap. II.D below).

10. The remainder of this chapter presents the results of each of the three parts of the technical analysis of Mali's BUR outlined in paragraph 9 above.

## **B. Extent of the information reported**

11. The elements of information referred to in paragraph 9(a) above include the national GHG inventory report; information on mitigation actions, including a description of such actions, an analysis of their impacts and the associated methodologies and assumptions, and information on progress in their implementation; information on domestic MRV; and information on support needed and received.

12. According to paragraph 15(a) of the annex to decision 20/CP.19, in undertaking the technical analysis of the submitted BUR, the TTE is to identify the extent to which the elements of information listed in paragraph 11 above have been included in the BUR of the Party concerned. The TTE considers that the reported information is partially consistent with the UNFCCC reporting guidelines on BURs. Specific details on the extent of the information reported for each of the required elements are provided in the tables included in annex I.

## **C. Technical analysis of the information reported**

13. The aim of the technical analysis referred to in paragraph 9(b) above is to increase the transparency of the information reported by Parties on mitigation actions and their effects, without engaging in a discussion on the appropriateness of those actions. Accordingly, the focus of the technical analysis was on the transparency of the information reported in the BUR.

14. For information reported on national GHG inventories, the technical analysis also focused on the consistency of the methods used for preparing those inventories with the appropriate methods developed by the IPCC and referred to in the UNFCCC reporting guidelines on BURs.

15. The results of the technical analysis are presented in the remainder of this chapter.

### **1. Information on national circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis**

16. As per the scope defined in paragraph 2 of the UNFCCC reporting guidelines on BURs, the BUR should provide an update to the information contained in the most recently submitted NC, including information on national circumstances and institutional arrangements relevant to the preparation of NCs on a continuous basis. In their NCs, non-Annex I Parties report on their national circumstances following the reporting guidance contained in paragraphs 3–5 of the UNFCCC guidelines for the preparation of NCs from non-

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<sup>2</sup> Decision 2/CP.17, annex IV.

<sup>3</sup> Decision 2/CP.17, annex III.

Annex I Parties<sup>4</sup> and they could report similar information in their BUR, which is an update of their most recently submitted NC.

17. Mali reported in its first BUR information on its national circumstances, including a description of national and regional development priorities, objectives and circumstances, including features of geography, climate and economy that might affect the Party's ability to deal with mitigating and adapting to climate change, as well as information on national circumstances and constraints in relation to specific needs and concerns arising from the adverse effects of climate change or the impact of the implementation of response measures, as referred to in Article 4, paragraph 8, and, as appropriate, Article 4, paragraphs 9–10, of the Convention.

18. Mali reported in its first BUR information on its institutional arrangements relevant to the preparation of its NCs and BURs on a continuous basis. The description covers key aspects of the planned institutional arrangements, including the proposed legal status and roles and responsibilities of the overall coordinating entity, the involvement and roles of other institutions and experts, and mechanisms for information and data exchange. The Ministry of the Environment, Sanitation and Sustainable Development is the overall coordinating body through the Environment and Sustainable Development Agency, which oversees the activities of the sectoral working groups, and collaboratively the two institutions are responsible for the national climate change policy and the preparation of NCs and BURs. The institutions participating in preparing the GHG inventory and designing mitigation actions are organized into working groups that coordinate the work by sector, such as energy, IPPU, AFOLU and waste, and activities such as data collection.

19. Information on the extent to which the current institutional arrangements are sustainable and allow for the reporting of NCs and BURs on a continuous basis was not clear to the TTE. During the technical analysis, the Party clarified that the arrangements are not sustainable as they rely mainly on informal agreements and memorandums of understanding among institutions. The lack of sustainable arrangements is exacerbated by the high turnover and mobility of staff. A legal framework has been formulated with the aim of facilitating coordination and cooperation among national and private sector institutions in collecting the data necessary for reporting and in operationalizing an MRV system. The Party further indicated that lack of capacity is a barrier to formalizing and operationalizing institutional arrangements.

20. The TTE noted that the transparency of the information reported on institutional arrangements could be enhanced by addressing the area noted in paragraph 19 above, which could facilitate a better understanding of the information reported on institutional arrangements.

21. Mali reported in its BUR a proposed overall coordination of a domestic MRV system, as the system was being designed at the same time as the reporting was taking place. The Party provided a proposed MRV framework designed to establish effective and sustainable institutional arrangements, define data collection and delivery procedures, and enhance local capacity in relation to the MRV system. The new MRV system is being designed to build on existing systems, processes and infrastructure, rendering them cost-effective, and will address issues related to the methodology for collecting AD; the management of AD, including quality assurance and archiving; and capacity-building, including for preparing for implementation of and transitioning to the ETF.

## **2. National greenhouse gas emissions by sources and removals by sinks**

22. As indicated in table I.1, Mali reported information on its GHG inventory in its BUR partially in accordance with paragraphs 3–10 of the UNFCCC reporting guidelines on BURs and paragraphs 8–24 of the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties.

23. Mali submitted its first BUR in 2023 and the GHG inventory reported is for 2013–2017. However, the time series is not consistent for all sectors. For example, the time series reported for the energy sector is 2013–2017, but 2013–2018 for IPPU, 2013–2019 for

<sup>4</sup> Decision 17/CP.8, annex.

AFOLU and 2012–2019 for waste. The latest reported inventory year is more than four years prior to the date of submission of the Party's BUR. During the technical analysis, Mali clarified that it had experienced difficulties obtaining the data required to complete the energy and IPPU sector inventories for up to 2019.

24. Mali's BUR includes a reference to a technical appendix to the GHG inventory, including sectoral reports and an emissions breakdown; however, the appendix was found to be an empty page. During the technical analysis, the Party clarified that the information had been omitted and provided the appendix.

25. Information on GHG emissions and removals in the BUR was estimated using the 2006 IPCC Guidelines, but the methodological tier used (tier 1) was specified for the energy sector only. The Party reported that it had applied the IPCC good practice guidance for estimating emissions.

26. The Party did not provide information in tabular format in its BUR on methodological tiers and EFs used to estimate emissions except for the energy sector. Information on the methodological tiers and EFs used to estimate emissions from the IPPU, waste, agriculture and LULUCF sectors was not reported in Mali's BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that tier 1 methodology and EFs from the 2006 IPCC Guidelines were used for all sectors reported in the BUR.

27. Information on the sources of AD and EFs used was reported in the BUR for all sectors. The sources of AD include national energy balances and the Energy Information System databases of the National Energy Directorate, as well as various industries with priority given to national sources. The Party used default EFs from the 2006 IPCC Guidelines.

28. Information on actual AD used was reported for all sectors except the energy sector. The Party provided only final estimates of GHG emissions for this sector and clarified in its BUR that the lack of available AD was a recurring constraint in estimating GHG emissions.

29. Information on GHG emissions by gas was not reported in Mali's BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party confirmed that GHG emissions were presented in CO<sub>2</sub> eq only owing to capacity constraints.

30. Information on emissions of other gases, including precursor gases, was not reported and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that it lacked the capacity to estimate and report the relevant data.

31. Mali applied notation keys in tables where numerical data were not provided for the energy sector only. The use of notation keys for reporting energy sector emissions was consistent with the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties.

32. Notation keys for sectors other than energy (i.e. IPPU, AFOLU and waste) were not reported and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that it envisages building capacity to report estimates of emissions on a gas-by-gas basis and to apply notation keys where numerical data are not available.

33. Mali did not report comparable information addressing the tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF, the sectoral reporting tables annexed to the Revised 1996 IPCC Guidelines (i.e. information on annual changes in carbon stock in living biomass, dead organic matter and soils) or the stratification of all land-use categories, and the reason for this was not clear to the TTE. During the technical analysis, Mali clarified that it was unable to report this information owing to a lack of technical capacity.

34. The shares of emissions that different sectors contributed to the Party's total GHG emissions excluding land and HWP (category 3.B and, if reported, 3.D), as calculated by the TTE using information from the BUR, in 2013–2017 are reflected in the table.

#### **Shares of greenhouse gas emissions by sector of Mali for 2013–2017**

| <i>Sector</i> | <i>GHG emissions<br/>(Gg CO<sub>2</sub> eq)</i> | <i>% share<sup>a</sup></i> | <i>% change<br/>2013–2017</i> |
|---------------|---|----------------------------|-------------------------------|
| Energy        | 5 415.85  | 5.8                        | 55.1                          |

| <i>Sector</i>   | <i>GHG emissions<br/>(Gg CO<sub>2</sub> eq)</i> | <i>% share<sup>a</sup></i> | <i>% change<br/>2013–2017</i> |
|---|---|----------------------------|-------------------------------|
| IPPU  | 421.49  | 0.5                        | –87.8                         |
| AFOLU   | –237 967.01                                     | NA                         | –8.4                          |
| Livestock (category 3.A)  | 25 966.68                                       | 27.7                       | 20.3                          |
| Land (category 3.B)   | –325 309.20                                     | NA                         | –4.2                          |
| Aggregate sources and non-CO <sub>2</sub> emissions<br>sources on land (category 3.C) | 61 375.51                                       | 65.6                       | –13.7                         |
| HWP and other emissions (category 3.D)  | NE  | NA                         | NA                            |
| Waste   | 421.61  | 0.5                        | 64.7                          |
| <b>Total (including land and HWP)</b>   | <b>–231 708.06</b>                              | <b>–</b>                   | <b>–9.1</b>                   |
| <b>Total (excluding land and HWP)</b>   | <b>93 601.14</b>                                | <b>–</b>                   | <b>–6.3</b>                   |

<sup>a</sup> Share of total without 2006 IPCC Guidelines AFOLU category 3.B (land) and, if reported, category 3.D (HWP (3.D.1) and other emissions (3.D.2)).

35. Mali reported information on its use of GWP values consistent with those provided by the IPCC in its AR2 based on the effects over a 100-year time-horizon of GHGs.

36. For the energy sector, information was clearly reported on GHG emissions, methodological tier levels, AD and their sources, GWP values, key categories and notation keys used. The key categories identified within the sector were 1.A.4 (other sectors – biomass) (CH<sub>4</sub>), 1.A.3.b (road transport) (CO<sub>2</sub>), 1.A.4 (other sectors – liquid fuels) (CO<sub>2</sub>), 1.A.2 (manufacturing industries and construction – liquid fuels) (CO<sub>2</sub>) and 1.A.1 (energy industries – biomass) (CH<sub>4</sub>). The large increase in emissions in the sector over the time series was due mainly to increases in gasoline and diesel consumption in transport and energy industries.

37. For the IPPU sector, information was clearly reported on GHG emissions, AD and their sources, EFs, key categories and uncertainty analysis. The GHG inventory for IPPU was developed using IPCC inventory software, consistently with the application of methods in the 2006 IPCC Guidelines. The emissions associated with industrial processes in Mali (i.e. cement production, lime production, ceramics and uses of carbonates) amounted to 346.6 Gg CO<sub>2</sub> eq in 2013, stayed relatively stable between 2013 and 2015, and increased gradually from 2016 to 2018, owing mainly to an increase in cement production. PFC emissions associated with the use of solvents accounted for over 80 per cent of emissions in the sector between 2013 and 2016. The HFC and PFC emissions associated with the use of solvents declined dramatically thereafter owing to a ban introduced in 2017.

38. Although the Party reported HFC and PFC emissions, no information on SF<sub>6</sub> emissions (or a lack of relevant sources) was provided. During the technical analysis, the Party confirmed that it had difficulty estimating some GHG emissions and that lack of capacity in this regard was the barrier to reporting, including for HFC and PFC emissions.

39. For 2006 IPCC Guidelines AFOLU categories 3.A (livestock) and 3.C (agricultural soils), Mali used EFs from the 2006 IPCC Guidelines and provided AD on the number of livestock or the amount of fertilizer used, and on rice production.

40. For 2006 IPCC Guidelines AFOLU category 3.B (land), Mali reported annual GHG emissions and removals for 2013–2019. Overall, the net removals for category 3.B fluctuated between a minimum of 219,542.32 CO<sub>2</sub> eq in 2013 and a maximum of 258,336.67 CO<sub>2</sub> eq in 2015. Information about AD on the evolution of the area of land-use categories for 2013–2019 was provided.

41. Mali did not report emissions for category 3.D.1 (HWP) and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that additional information was available in the appendix to the BUR, but the TTE could not find the appendix referred to.

42. Information on emissions at the subcategory level of the 2006 IPCC Guidelines was not reported. As a result, it is not possible to determine the emissions balance for subcategories 3.A.1 (enteric fermentation), 3.A.2 (manure management), 3.B.1.a (forest land

remaining forest land), 3.B.1.b (land converted to forest land), 3.B.2.a (cropland remaining cropland), 3.B.2.b (land converted to cropland), 3.B.3.a (grassland remaining grassland), 3.B.3.b (land converted to grassland), 3.B.4.a (wetlands remaining wetlands), 3.B.4.b (land converted to wetlands), 3.B.5 (settlements), 3.C.1 (biomass burning), 3.C.2 (liming), 3.C.3 (urea application), 3.C.4 (direct N<sub>2</sub>O emissions from managed soils), 3.C.5 (indirect N<sub>2</sub>O emissions from managed soils) and 3.C.6 (rice cultivation), and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that the lack of N<sub>2</sub>O estimates is essentially due to lack of data but also to the lack of expert capacity, particularly among sectoral experts. The Party indicated that information on CO<sub>2</sub> emissions was in the appendix to the BUR but the TTE could not find the appendix. Additionally, regarding CH<sub>4</sub> emissions, the Party responded that in certain cases, such as for biomass burning and rice cultivation and for certain animal species, data are available, but the Party needs training on asking stakeholders to provide the data.

43. For the waste sector, information was clearly reported on GHG emissions, AD and their sources, and EFs. The AD collected for GHG calculations in the waste sector were supplied by the National Directorate of Sanitation and Control of Pollution and Nuisances, the National Directorate of Industry and hospitals. Emissions from waste fluctuated between 256.01 and 527.64 Gg CO<sub>2</sub> eq between 2013 and 2019, with an upward trend due to an increase in CH<sub>4</sub> emissions, mainly from using solid waste to make organic fertilizer. Most CO<sub>2</sub> and N<sub>2</sub>O emissions in this sector were attributable to solid waste management through incineration and open burning of waste. Emissions from wastewater discharge in Mali are relatively limited.

44. The BUR provides an update to some of the GHG inventories reported in the Party's previous NCs. The TTE noted that summary information going back to 1995 for all sectors included in Mali's NC1 was not reported in the BUR. The TTE also noted that the Party did not recalculate data for previous years when the Revised 1996 IPCC Guidelines were used. During the technical analysis, the Party indicated that the data included in previous NCs (e.g. from 1995) were developed by external consultants and are not accessible.

45. Mali described in its BUR the institutional framework for the preparation of its 2013–2017 GHG inventory. The Party reported that the Ministry of the Environment, Sanitation and Sustainable Development is responsible for developing the BUR, with the Environment and Sustainable Development Agency serving as the central coordinator of the Party's sectoral working groups. The Ministry of the Environment, Sanitation and Sustainable Development is the governmental body responsible for the Party's climate change policy and GHG inventory, which was prepared with the support of the UNFCCC, the GEF and the United Nations Environment Programme.

46. Mali reported that a key category analysis was performed for the energy and AFOLU sectors for the level of emissions for 2017. The analysis, which was based on approach 1 from the 2006 IPCC Guidelines, identified six key categories: manufacturing industries and construction – liquid fuels (1.A.2) (CO<sub>2</sub>), road transport (1.A.3.b) (CO<sub>2</sub>), other sectors – liquid fuels (1.A.4) (CO<sub>2</sub>), other sectors – biomass (1.A.4) (CH<sub>4</sub>), energy industries – biomass (1.A.1) (CH<sub>4</sub>) and indirect N<sub>2</sub>O emissions from managed soils (3.C.5) (N<sub>2</sub>O).

47. Mali reported that it did not conduct a key category analysis for the waste and IPPU sectors for the same period. During the technical analysis, the Party clarified that it did not have the capacity to undertake a key category analysis for all sectors.

48. Mali reported CO<sub>2</sub> fuel combustion emissions, but did not specify whether the reference or sectoral approach was used to estimate those emissions. During the technical analysis, the Party clarified that it had used the sectoral approach to estimate CO<sub>2</sub> fuel combustion emissions and did not have the capacity to apply both approaches.

49. Information on international aviation and marine bunker fuels was not reported in the BUR. The Party explained in the BUR that data were not available to estimate emissions for these subcategories.

50. Mali reported some information on the uncertainty assessment of its national GHG inventory. The uncertainty assessment was undertaken using the tier 1 approach from the 2006 IPCC Guidelines.



51. Information on the uncertainty associated with AD and EFs was not reported in the BUR, nor were the exact level of uncertainty underlying assumptions for calculating uncertainties or the methodologies used to estimate these uncertainties. During the technical analysis, the Party acknowledged the need to reinforce capacities to perform uncertainty analyses consistently across all sectors and clearly report the methodology used in and outcomes of the uncertainty analyses undertaken across all sectors.

52. The TTE noted that the transparency of the information reported on GHG inventories could be enhanced by addressing the areas noted in paragraphs 23, 24, 26, 29, 30, 32, 33, 38, 41, 42, 44, 47, 48 and 51 above, which could facilitate a better understanding of the information reported on GHG inventories.

### **3. Mitigation actions and their effects, including associated methodologies and assumptions**

53. As indicated in table I.2, Mali reported in its BUR, partially in accordance with paragraphs 11–13 of the UNFCCC reporting guidelines on BURs, information on mitigation actions and their effects, to the extent possible.

54. The information reported provides an overview of the Party's mitigation actions and their effects. In its BUR, Mali reported information on its national context and framed its national mitigation planning and actions in the context of its NDC and its NC3. Mali's commitment, reflected in its NDC and NC3, is to reduce GHG emissions by 31 per cent in the energy sector, 29 per cent in the agriculture sector and 21 per cent in the forestry and other land use sector by 2030 compared with the 'business as usual' scenario. Mali's mitigation strategy focuses on key sectors such as energy, agriculture, and forestry and other land use. The promotion of renewable energy, particularly through solar energy projects and expanding rural electrification, is a central component of this mitigation strategy. For instance, Mali aims to increase the share of renewable energy in its energy mix to 25 per cent by 2030. The total estimated cost of the NDC implementation is USD 12.34 billion, including USD 4.34 billion for mitigation measures and USD 8 billion for adaptation. Mali is revising its NDC Action Plan and Investment Plan, which will align with the revised NDC. A notable project listed in the NDC is the village electrification programme, which is expected to significantly contribute to reducing GHG emissions. In the agriculture and forestry sectors, initiatives such as improved irrigation systems, organic fertilization practices and large-scale reforestation efforts are expected to restore substantial areas of degraded land and improve carbon sequestration. By 2030, Mali aims to restore 500,000 ha degraded land, which will contribute to the reduction of GHG emissions and enhance the country's resilience to climate change.

55. The Party reported a summary of most of its sectoral mitigation actions in tabular format in accordance with paragraph 11 of the UNFCCC reporting guidelines on BURs. The Party also reported information on its mitigation actions in narrative format.

56. Consistently with paragraph 12(a) of the UNFCCC reporting guidelines on BURs, Mali clearly reported the names of mitigation actions and provided information on quantitative goals for all the mitigation actions described.

57. Information (i.e. coverage (sector and gases) and progress indicators) was not reported for some of the mitigation actions for all sectors and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that it had experienced difficulties obtaining the data required, lacked understanding of the information required in the UNFCCC reporting guidelines on BURs and lacked the capacity to report the information in line with the provisions therein.

58. Information on methodologies and assumptions used, objectives of the action and steps taken or envisaged to achieve that action, and progress of implementation of the underlying steps taken and results achieved were not reported for some of the mitigation actions for all sectors and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that it had experienced difficulties obtaining the data required and that it envisages building capacity to understand the information required in the UNFCCC reporting guidelines on BURs and to report the information in line with the provisions therein.

59. The mitigation actions in Mali's energy sector focus mainly on promoting renewable energy sources, such as expanding solar energy projects (including solar mini grids and off-grid solar electrification), developing hydroelectric power plants and promoting bioenergy solutions. Other key actions include improving energy efficiency in areas such as public lighting, cookstoves and industrial processes, particularly in agroprocessing and cement production. Mali is also working towards improving environmentally friendly transportation through efforts to promote cleaner vehicle technologies and public transportation initiatives. Of the mitigation actions reported for this sector, several are ongoing, such as the installation of solar mini grids and the dissemination of improved cookstoves, while some are in the planning or early implementation stages. Mali reported that the estimated emissions resulting from implementing mitigation actions in the energy sector amount to 6,336 kt CO<sub>2</sub> by 2030 compared with the 'business as usual' scenario of 9,269 kt CO<sub>2</sub>. The highest share of GHG emission reductions in the energy sector comes from the implementation of renewable energy projects, such as solar electrification in rural areas and efficient energy use in households. Additionally, the Party highlighted expected co-benefits of these actions, such as reduced dependency on imported fossil fuels, improved air quality leading to better public health outcomes and job creation in the renewable energy sector.

60. The mitigation actions in Mali's IPPU sector focus primarily on integrating more climate-friendly technologies into the sector, though it is not considered a priority owing to the country's low level of industrialization. Mali's industry sector, which contributed an average of 16.4 per cent to the gross domestic product between 2010 and 2014 and only 13.2 per cent in 2019, consists mainly of agrifood industries. Industrial GHG emissions are largely attributed to CO<sub>2</sub> and halocarbons, primarily from cement production, lime manufacturing, brickmaking and solvent use. While the National Industrial Development Policy and the National Quality Policy are aimed at improving industrial competitiveness and modernization, they contain limited direct measures for mitigating GHG emissions. Key actions identified include promoting industrial ecology and cleaner production methods. By 2030, these actions are expected to contribute to the reduction of GHG emissions in the sector, though expected results were not extensively detailed in the BUR.

61. The mitigation actions in Mali's AFOLU sector focus primarily on sustainable land management, agroforestry and improving agricultural productivity through soil and water conservation. These actions are guided by several key national policies, including the National Environmental Protection Policy, the National Forest Policy and the National Wetlands Policy. The AFOLU sector plays a crucial role in reducing GHG emissions in Mali. Key mitigation actions include promoting agroforestry, enhancing livestock management and reforestation efforts. In particular, programmes such as Assisted Natural Regeneration and forest plantation projects are central to Mali's mitigation strategy. The country is committed to maintaining its status as a carbon sink (the net balance of the forestry and land-use change sector is a GHG sequestration balance, with an average value of 220,505 kt CO<sub>2</sub> per year), with the forestry sector sequestering an average of 781,473 kt CO<sub>2</sub> per year. However, emissions from deforestation and land-use changes, primarily driven by agricultural expansion and the need for wood energy, pose a challenge. The use of alternative energy sources such as biogas and improved cookstoves is expected to reduce the pressure on forests and reduce emissions. By 2030, Mali aims to maintain a net carbon sink in the AFOLU sector, with an estimated net sink capacity of 153,079 kt CO<sub>2</sub> under its mitigation scenario, which is 21 per cent more CO<sub>2</sub> sequestered than under the baseline scenario ('business as usual').

62. The mitigation actions in Mali's waste sector focus mainly on composting, recycling and waste-to-energy projects. Mali reported several planned and ongoing mitigation actions within its waste sector, such as the Integrated Solid Waste Management Project in Bamako, which aims to reduce waste-related GHG emissions while improving public health and creating job opportunities. According to Mali's BUR, these actions are part of the National Sanitation Policy and are expected to contribute to the country's long-term goal of reducing GHG emissions in the waste sector. While specific emission reduction figures are still under evaluation, the sector is anticipated to play a role in achieving Mali's overall climate goals by 2030.

63. Mali did not provide information on its involvement in international market mechanisms and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that it had difficulties understanding the associated reporting requirement.

64. The TTE noted that the transparency of the information reported on mitigation actions could be enhanced by addressing the areas noted in paragraphs 57, 58 and 63 above, which could facilitate a better understanding of the information reported on mitigation actions.

#### **4. Constraints and gaps, and related technology, financial, technical and capacity-building needs, including a description of support needed and received**

65. As indicated in table I.3, Mali reported in its BUR, mostly in accordance with paragraphs 14–16 of the UNFCCC reporting guidelines on BURs, information on finance, technology and capacity-building needs and support received.

66. Mali reported information on constraints and gaps, and related financial, technical and capacity-building needs in accordance with paragraph 14 of the UNFCCC reporting guidelines on BURs. In its BUR, Mali identified its limited financial resources and technical capacity, the low level of collaboration among the institutions responsible for implementing government policies and the status (not yet operational) of its overall national MRV system as constraints. Mali reported that its financial, technical and capacity-building needs are primarily in the areas of GHGs (e.g. collecting AD across all sectors, developing country-specific EFs for key categories, using the 2006 IPCC Guidelines for preparing the national GHG inventory), mitigation (e.g. limited human and financial capacity to harness new technologies, lack of knowledge of available technologies, lack of understanding of how to apply and disseminate mitigation technologies, lack of knowledge of how to identify and evaluate the elements for calculating the costs and benefits of GHG emission mitigation options), institutional arrangements (weak institutional arrangements for ensuring sustainable GHG inventory planning, preparation and management; lack of capacity to formalize institutional arrangements for the processes for the preparation, general coordination, compilation and presentation of the NCs and BURs, including legally binding, formal agreements between relevant government ministries and agencies for data sharing, definition of roles and responsibilities, and timelines).

67. Mali reported information on financial resources, technology transfer, capacity-building and technical support received in accordance with paragraph 15 of the UNFCCC reporting guidelines on BURs. In its BUR, Mali reported that it received support from multilateral sources and bilateral sources that amounted to 217 billion CFA francs (around USD 348 million) for both adaptation and mitigation projects. Mali also reported support received in different currencies between 2000 and 2016 for all activities and projects specifically related to combating climate change carried out in the country. The BUR indicates that Mali received USD 155,096,380 from the GEF, including USD 200,000 for preparing a national action plan for adaptation and USD 2,340,000 for strengthening the capacity to adapt and increase resilience to climate change in Mali's agriculture sector. The Party also reported its contributions to various mitigation and adaptation programmes as co-financing programmes. The information reported also indicates that Mali received capacity-building and technical support from a number of international organizations, including the Food and Agriculture Organization of the United Nations and the United Nations Development Programme, which supported the country in undertaking reforestation activities and building community resilience for adaptation respectively.

68. Information on financial support received from the GEF to prepare the NC4 and the first BUR was not reported and the reason for this was not clear to the TTE. During the technical analysis, the Party indicated that financing for the NC4 was provided through the United Nations Development Programme (Executing Agency).

69. Furthermore, information on technical support received for climate change activities was not clearly reported in the BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party acknowledged that the lack of distinction between the technical support received and financial data included in the BUR was due to the time period considered for the analysis and because information on technical support received is dispersed across different institutions and organizations (civil society, private sector, etc.),

and the tool used for collecting programming resources received by the State was unable to capture this information owing to its unavailability, and consequently the Party faced challenges in reporting and transmitting this information.

70. Mali reported information on nationally determined technology needs with regard to the development and transfer of technology in accordance with paragraph 16 of the UNFCCC reporting guidelines on BURs. Mali reported in its BUR that a technology needs assessment was conducted to determine technology needs relating to climate change mitigation and adaptation, and identified gaps and constraints in its BUR.

71. Information on how the technology needs assessment was nationally determined was not clearly reported in the BUR (e.g. whether it was determined as a result of the technology needs assessment process under the UNFCCC or under other national processes) and the reason for this was not clear to the TTE. During the technical analysis, Mali indicated that the assessment of technology needs was carried out by the National Meteorological Agency of Mali only for programmes that the Party determined were a priority. The Party encountered challenges related to data collection and the lack of frameworks for data provision, as well as the lack of databases for data archiving and storage.

72. Information on the extent to which the technologies reported as technology support received are already implemented in the country and which aspects of such technologies the Party seeks to be further supported was not clearly reported in Mali's BUR. During the technical analysis, the Party clarified that information on technical support received and information on technical assistance received was communicated in the BUR; however, increased capacity of staff is necessary to integrate such information into subsequent BURs.

73. The TTE noted that the transparency of the information reported on needs and support received could be further enhanced by addressing the areas noted in paragraphs 68, 69, 71 and 72 above, which could facilitate a better understanding of the information reported on needs and support received.

## **D. Identification of capacity-building needs**

74. In consultation with Mali, the TTE identified the following needs for capacity-building:

(a) Enhancing national capacity to use the 2006 IPCC Guidelines and reporting provisions for GHG inventories by applying the methods in the 2006 IPCC Guidelines to national GHG inventories, such as conducting key category analysis, using notation keys, filling data gaps and including GWP;

(b) Enhancing technical capacity to disaggregate and report national emissions on a gas-by-gas basis in line with the 2006 IPCC Guidelines;

(c) Enhancing the capacity of the GHG inventory team to perform recalculations to ensure time-series consistency and report updated GHG inventories;

(d) Enhancing national capacity for data collection, and training on the methodology and reporting requirements for estimating emissions of precursor gases;

(e) Enhancing national capacity to apply and clearly specify the tiers used when estimating emissions for all categories;

(f) Enhancing national capacity to undertake uncertainty analysis consistently across all sectors and clearly report the methodology used and outcomes of such analyses;

(g) Enhancing national capacity to estimate and report the associated emissions of HFCs, PFCs, SF<sub>6</sub> and other gases not controlled by the Montreal Protocol included in the 2006 IPCC Guidelines;

(h) Enhancing technical capacity to estimate and report CO<sub>2</sub> fuel combustion emissions using both the sectoral and the reference approach, and to explain any large differences between the two approaches;

- (i) Enhancing the capacity of the inventory team to use the IPCC good practice guidance for LULUCF for reporting information on emissions and removals by gas;
- (j) Enhancing capacity to understand the information required by the UNFCCC reporting guidelines on BURs related to mitigation actions and to report the information in line with the provisions therein, specifically enhancing capacity to report the description of the mitigation actions, the methodologies used to estimate the impact of the mitigation actions, the information on assumptions used for the reporting, the objectives for the actions and the steps taken to achieve them, the progress of implementation and the results achieved;
- (k) Enhancing capacity to report the Party's involvement in international carbon markets;
- (l) Enhancing capacity to formalize and implement the institutional arrangements related to the preparation of NCs and BURs on a continuous basis to prepare for the transition to the ETF;
- (m) Enhancing capacity to establish the proposed domestic MRV arrangements and implement them to cover the GHG inventory and to track mitigation actions and support received;
- (n) Enhancing capacity to report information on technical support received, along with financial, technology transfer and capacity-building support received;
- (o) Further enhancing capacity to report information on how technology needs were nationally determined;
- (p) Enhancing capacity to collect, process and archive data on GHG inventories, mitigation actions and support received.

75. The TTE noted that, in addition to those identified during the technical analysis, Mali reported several capacity-building needs covering the following areas:

- (a) GHG inventory preparation;
- (b) Technology transfer.

### III. Conclusions

76. The TTE conducted a technical analysis of the information reported in the first BUR of Mali in accordance with the UNFCCC reporting guidelines on BURs and concludes that the information reported is partially consistent. It provides an overview of national circumstances and institutional arrangements relevant to the preparation of NCs on a continuous basis; the national inventory of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol, mitigation actions and their effects, including associated methodologies and assumptions; constraints and gaps, and related financial, technical and capacity-building needs, including a description of support needed and received; and domestic MRV. During the technical analysis, additional information was provided by the Party on most of the above-mentioned areas. The TTE concluded that the information analysed is partially transparent.

77. Mali reported an update on the planned institutional arrangements relevant to the preparation of its BURs on a continuous basis. Mali's first BUR highlighted planned roles, legal status and mechanisms for data exchange. The Ministry of the Environment, Sanitation and Sustainable Development, through the Environment and Sustainable Development Agency, oversees working groups and jointly manages national climate policies and reporting. Working groups are organized by sector, such as energy, IPPU, AFOLU and waste, and focus on tasks such as data collection and mitigation planning. It has taken significant steps to operationalize its national domestic MRV system and to establish institutional arrangements that enable sustainable preparation of its BURs, such as formulating a decree to facilitate coordination and cooperation among national and private sector institutions in collecting the data necessary for reporting.

78. In its first BUR, submitted in 2023, Mali reported information on its national GHG inventory for 2013–2017. This includes estimates of GHG emissions and removals of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O for all relevant sources and sinks. Mali presented GHG inventories for 2013–2017 on a sectoral basis and not a gas-by-gas basis. The inventory was developed on the basis of the 2006 IPCC Guidelines and included an analysis for individual key categories. The total GHG emissions for 2017 were reported as 93,601.1 Gg CO<sub>2</sub> eq (excluding land and HWP) and –231,708.1 Gg CO<sub>2</sub> eq (including land and HWP). Six key categories and main gases were identified in the energy and AFOLU sectors: manufacturing industries and construction – liquid fuels (1.A.2) (CO<sub>2</sub>), road transport (1.A.3.b) (CO<sub>2</sub>), other sectors – liquid fuels (1.A.4) (CO<sub>2</sub>), other sectors – biomass (1.A.4) (CH<sub>4</sub>), energy industries – biomass (1.A.1) (CH<sub>4</sub>) and indirect N<sub>2</sub>O emissions from managed soils (3.C.5) (N<sub>2</sub>O). Estimates of fluorinated gases were mostly provided (HFCs and PFCs). Estimates of SF<sub>6</sub> emissions were not provided owing to difficulties in obtaining the necessary data, as clarified by the Party during the technical analysis.

79. Mali reported information on mitigation actions and their effects in both tabular and narrative format, including information on its national context, and framed its national mitigation planning and actions in the context of its NDC and its NC3. Mali reported planned and ongoing actions in the energy, AFOLU, IPPU and waste sectors. The promotion of renewable energy, particularly through solar energy projects and expanding rural electrification, is a central component of its strategy. For instance, Mali aims to increase the share of renewable energy in its energy mix to 25 per cent by 2030. In the energy sector, efforts focus on expanding the use of renewable energy, improving energy efficiency and promoting cleaner transport, with estimated reductions of 6,336 kt CO<sub>2</sub> by 2030. Mali aims to reduce GHG emissions by 31 per cent in the energy sector, 29 per cent in the agriculture sector and 21 per cent in the forestry and other land use sector by 2030 compared with the ‘business as usual’ scenario. The Party also reported information on its domestic MRV arrangements.

80. Mali reported information on key constraints, gaps and related needs, including the lack of coordination among the institutions responsible for implementing government policies and the lack of an operational national MRV system. Information was reported on technical and capacity-building needs, including for developing country-specific EFs and using the 2006 IPCC Guidelines for preparing the national GHG inventory, as well as the limited human and financial capacity to harness new technologies, and lack of knowledge of available technologies. The Party also reported that it received USD 155,096,380 from the GEF for implementing projects and programmes. Mali reported co-financing contributions to climate projects. The total amount of bilateral and multilateral funds received and GEF funding received for preparing the NC4 and first BUR was not clearly reported.

81. The TTE, in consultation with Mali, identified the 16 capacity-building needs listed in chapter II.D above and needs for capacity-building that aim to facilitate the Party’s reporting in accordance with the UNFCCC reporting guidelines on BURs and participation in ICA in accordance with the ICA modalities and guidelines, taking into account Article 4, paragraph 3, of the Convention. The Party, in consultation with the TTE, also identified the two needs for capacity-building to facilitate transition to the ETF listed in paragraph 75 above. Mali prioritized the capacity-building needs referred to in paragraph 74(a–i) and (l–n) above.

## Annex I

### Extent of the information reported by Mali in its first biennial update report

Table I.1

**Identification of the extent to which the elements of information on greenhouse gases are included in the first biennial update report of Mali**

| <i>Decision reference</i>                | <i>Provision of the reporting guidelines</i>  | <i>Assessment of whether the information was reported</i> | <i>Comments on the extent of the information provided</i>  |
|--|---|---|--|
| Decision 2/CP.17, paragraph 41(g)        | The first BUR shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, or more recent years if information is available, and subsequent BURs shall cover a calendar year that does not precede the submission date by more than four years.  | No  | Mali submitted its first BUR in August 2023. The GHG inventory reported is for 2013–2017, consistently for all sectors. However, for some sectors inventories were reported for beyond this period: 2013–2018 for IPPU, 2013–2019 for AFOLU and 2012–2019 for waste. |
| Decision 2/CP.17, annex III, paragraph 4 | Non-Annex I Parties should use the methodologies established in the latest UNFCCC guidelines for the preparation of NCs from non-Annex I Parties approved by the Conference of the Parties or those determined by any future decision of the Conference of the Parties on this matter.  | Yes   | Mali used the 2006 IPCC Guidelines.  |
| Decision 2/CP.17, annex III, paragraph 5 | The updates of the section on national inventories of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol should contain updated data on activity levels based on the best information available using the Revised 1996 IPCC Guidelines, the IPCC good practice guidance and the IPCC good practice guidance for LULUCF; any change to the EF may be made in the subsequent full NC. | Partly  | The Party provided only the final assessment results for the energy sector and not the actual AD. AD were mostly provided for the other sectors.   |
| Decision 2/CP.17, annex III, paragraph 6 | Non-Annex I Parties are encouraged to include, as appropriate and to the extent that capacities permit, in the inventory section of the BUR:  |   |  |
|  | (a) The tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF;  | No  | Comparable information was not reported.   |
|  | (b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines.   | Yes   | Comparable information was reported for the energy, IPPU and waste sectors.  |
| Decision 2/CP.17, annex III, paragraph 7 | Each non-Annex I Party is encouraged to provide a consistent time series back to the years reported in its previous NCs.  | No  | The time series reported in the BUR does not include 1995–2011.  |
| Decision 2/CP.17, annex III, paragraph 8 | Non-Annex I Parties that have previously reported on their national GHG inventories contained in their NCs are encouraged to submit summary information tables of inventories for previous submission years (e.g. for 1994 and 2000).   | Partly  | This information was not reported for some years (e.g. 1995, 2000–2011).   |

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| <i>Decision reference</i>             | <i>Provision of the reporting guidelines</i>  | <i>Assessment of whether the information was reported</i> | <i>Comments on the extent of the information provided</i>                                    |
|---------------------------------------|---|---|--|
|                                       | (a) Carbon monoxide;  | No  |  |
|                                       | (b) Nitrogen oxides;  | No  |  |
|                                       | (c) Non-methane volatile organic compounds.   | No  |  |
| Decision 17/CP.8, annex, paragraph 17 | Other gases not controlled by the Montreal Protocol, such as sulfur oxides, and included in the Revised 1996 IPCC Guidelines may be included at the discretion of Parties.  | No  |  |
| Decision 17/CP.8, annex, paragraph 18 | Non-Annex I Parties are encouraged, to the extent possible, and if disaggregated data are available, to estimate and report CO <sub>2</sub> fuel combustion emissions using both the sectoral and the reference approach and to explain any large differences between the two approaches.   | No  |  |
| Decision 17/CP.8, annex, paragraph 19 | Non-Annex I Parties should, to the extent possible, and if disaggregated data are available, report emissions from international aviation and marine bunker fuels separately in their inventories:  |   |  |
|                                       | (a) International aviation;   | No  |  |
|                                       | (b) Marine bunker fuels.  | No  |  |
| Decision 17/CP.8, annex, paragraph 20 | Non-Annex I Parties wishing to report on aggregated GHG emissions and removals expressed in CO <sub>2</sub> eq should use the GWP provided by the IPCC in its AR2 based on the effects of GHGs over a 100-year time-horizon.  | Yes   | The Party used the GWP provided in the AR2.  |
| Decision 17/CP.8, annex, paragraph 21 | Non-Annex I Parties are encouraged to provide information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol, including a brief explanation of the sources of EFs and AD. If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe the source and/or sink categories, methodologies, EFs and AD used in their estimation of emissions, as appropriate. Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building: |   |  |
|                                       | (a) Information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol;  | Partly  | Mali used the 2006 IPCC Guidelines. Tier methodology used was not specified for all sectors. |
|                                       | (b) Explanation of the sources of EFs;  | Yes   |  |
|                                       | (c) Explanation of the sources of AD;   | Yes   |  |
|                                       | (d) If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe:   | NA  |  |
|                                       | (i) Source and/or sink categories;  |   |  |

| <i>Decision reference</i>             | <i>Provision of the reporting guidelines</i>   | <i>Assessment of whether the information was reported</i> | <i>Comments on the extent of the information provided</i> |
|---------------------------------------|--|---|---|
|                                       | (ii) Methodologies;  |   |   |
|                                       | (iii) EFs;   |   |   |
|                                       | (iv) AD;   |   |   |
|                                       | (e) Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building.  | No  |   |
| Decision 17/CP.8, annex, paragraph 22 | Each non-Annex I Party is encouraged to use tables 1–2 of the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties in reporting its national GHG inventory, taking into account the provisions established in paragraphs 14–17 of the same guidelines. In preparing those tables, Parties should strive to present information that is as complete as possible. Where numerical data are not provided, Parties should use the notation keys as indicated. | Partly  | Notation keys were provided for the energy sector only.   |
| Decision 17/CP.8, annex, paragraph 24 | Non-Annex I Parties are encouraged to provide information on the level of uncertainty associated with inventory data and their underlying assumptions, and to describe the methodologies used, if any, for estimating these uncertainties:   |   |   |
|                                       | (a) Level of uncertainty associated with inventory data;   | Yes   |   |
|                                       | (b) Underlying assumptions;  | No  |   |
|                                       | (c) Methodologies used, if any, for estimating these uncertainties.  | No  |   |

*Note:* The parts of the UNFCCC reporting guidelines on BURs on reporting information on GHG emissions by sources and removals by sinks in BURs are contained in paras. 3–10 and 41(g) of the UNFCCC reporting guidelines on BURs. Further, as per para. 3 of those guidelines, non-Annex I Parties are to submit updates of their national GHG inventories in accordance with paras. 8–24 of the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties. The scope of such updates should be consistent with the non-Annex I Party's capacity and time constraints and the availability of its data, as well as the level of support provided by developed country Parties for biennial update reporting.

Table I.2

**Identification of the extent to which the elements of information on mitigation actions are included in the first biennial update report of Mali**

| <i>Decision reference</i>                 | <i>Provision of the reporting guidelines</i>   | <i>Assessment of whether the information was reported</i> | <i>Comments on the extent of the information provided</i>  |
|---|--|---|--|
| Decision 2/CP.17, annex III, paragraph 11 | Non-Annex I Parties should provide information, in tabular format, on actions to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol. | Partly  | Mali provided information on some mitigation actions in tabular format.  |
| Decision 2/CP.17, annex III, paragraph 12 | For each mitigation action or group of mitigation actions, including, as appropriate, those listed in document FCCC/AWGLCA/2011/INF.1, developing country Parties shall provide the following information, to the extent possible:   |   |  |
|   | (a) Name and description of the mitigation action, including information on the nature of the action, coverage (i.e. sectors and gases), quantitative goals and progress indicators;   | Partly  | A description of the mitigation action, including information on the nature of the action, coverage (i.e. sectors and gases) |

| <i>Decision reference</i>                 | <i>Provision of the reporting guidelines</i>  | <i>Assessment of whether the information was reported</i> | <i>Comments on the extent of the information provided</i>  |
|---|---|---|--|
|   |   |   | and progress indicators, was not reported for most actions in all sectors.   |
|   | (b) Information on:   |   |  |
|   | (i) Methodologies;  | Partly  | Information on methodologies was not reported for most mitigation actions in all sectors.  |
|   | (ii) Assumptions;   | Partly  | Information on assumptions was not reported for most mitigation actions in all sectors.  |
|   | (c) Information on:   |   |  |
|   | (i) Objectives of the action;   | Partly  | Information on objectives of the action was not reported for most mitigation actions in all sectors.   |
|   | (ii) Steps taken or envisaged to achieve that action;   | Partly  | Information on steps taken or envisaged to achieve actions was not reported for most mitigation actions in all sectors.                          |
|   | (d) Information on:   |   |  |
|   | (i) Progress of implementation of the mitigation actions;   | Partly  | Mali did not indicate the status of implementation of actions in the waste sector.   |
|   | (ii) Progress of implementation of the underlying steps taken or envisaged;   | Partly  | Information on progress of implementation of the underlying steps taken or envisaged was not reported for most actions in all sectors.           |
|   | (iii) Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible; | Partly  | Information on results achieved, such as estimated outcomes and estimated emission reductions, was not reported for most actions in all sectors. |
|   | (e) Information on international market mechanisms.   | No  | Mali did not report information on international market mechanisms.  |
| Decision 2/CP.17, annex III, paragraph 13 | Parties should provide information on domestic MRV arrangements.  | Yes   |  |

*Note:* The parts of the UNFCCC reporting guidelines on BURs on the reporting of information on mitigation actions in BURs are contained in paras. 11–13 of the UNFCCC reporting guidelines on BURs.

Table I.3

**Identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the first biennial update report of Mali**

| <i>Decision reference</i>                 | <i>Provision of the reporting requirements</i>   | <i>Assessment of whether the information was reported</i> | <i>Comments on the extent of the information provided</i>   |
|---|--|---|---|
| Decision 2/CP.17, annex III, paragraph 14 | Non-Annex I Parties should provide updated information on:<br>(a) Constraints and gaps;<br>(b) Related financial, technical and capacity-building needs.   | Yes<br>Yes  |   |
| Decision 2/CP.17, annex III, paragraph 15 | Non-Annex I Parties should provide:<br>(a) Information on financial resources, technology transfer and capacity-building received from the GEF, Parties included in Annex II to the Convention and other developed country Parties, the Green Climate Fund and multilateral institutions for activities relating to climate change, including for the preparation of the current BUR;<br>(b) Information on technical support received from the GEF, Parties included in Annex II to the Convention and other developed country Parties, the Green Climate Fund and multilateral institutions for activities relating to climate change, including for the preparation of the current BUR. | Partly<br>Partly  | Financial support received from the GEF for preparing the BUR was not reported.<br><br>The Party did not separately classify technical support received from other support received from the GEF, Parties included in Annex II to the Convention and other developed country Parties, the Green Climate Fund and multilateral institutions for activities relating to climate change. |
| Decision 2/CP.17, annex III, paragraph 16 | With regard to the development and transfer of technology, non-Annex I Parties should provide information on:<br>(a) Nationally determined technology needs;<br>(b) Technology support received.   | Partly<br>Yes   | Technology needs were reported, but it was not clear how they were nationally determined.   |

*Note:* The parts of the UNFCCC reporting guidelines on BURs on the reporting of information on finance, technology and capacity-building needs and support received in BURs are contained in paras. 14–16 of the UNFCCC reporting guidelines on BURs.

## Annex II

### Reference documents

#### A. Reports of the Intergovernmental Panel on Climate Change

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#### B. UNFCCC documents

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