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## **Technical analysis of the third biennial update report of Morocco submitted on 20 April 2022**

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

#### *Summary*

According to decision 2/CP.17, paragraph 41(a), 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. Further, paragraph 41(f) of that decision states that Parties not included in Annex I to the Convention shall submit a biennial update report every two years, either as a summary of parts of their national communication in the year in which the national communication is submitted or as a stand-alone update report. 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 third biennial update report of Morocco, 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
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BUR	biennial update report
CGE	Consultative Group of Experts
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
F-gas	fluorinated gas
GEF	Global Environment Facility
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
ICA	international consultation and analysis
IE	included elsewhere
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
LEAP	Low Emissions Analysis Platform
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
NMVOC	non-methane volatile organic compound
NO	not occurring
non-Annex I Party	Party not included in Annex I to the Convention
PFC	perfluorocarbon
QA/QC	quality assurance/quality control
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 decision 2/CP.17, paragraph 41(a), 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. In addition, paragraph 41(f) of that decision states that non-Annex I Parties shall submit a BUR every two years, either as a summary of parts of their NC in the year in which the NC is submitted or as a stand-alone update report.
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. Morocco submitted its second BUR on 31 December 2019, which was analysed by a TTE in the sixteenth round of technical analysis of BURs from non-Annex I Parties, conducted from 22 to 26 June 2020. After the publication of its summary report, Morocco participated in the thirteenth workshop for the facilitative sharing of views, convened in Sharm el-Sheikh on 12 November 2022.
5. This summary report presents the results of the technical analysis of the third BUR of Morocco, 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**

6. In accordance with the mandate referred to in paragraph 2 above, Morocco submitted its third BUR on 20 April 2022 as a stand-alone update report. The submission was made within two years and four months from the submission of the second BUR. During the technical analysis, the Party explained the reasons for submitting the BUR more than two years after the submission of the last BUR. Morocco informed the TTE that it considers the third BUR and NC4 (submitted on 30 December 2021) as a joint submission and that the delay was due to difficulties in collecting some additional information to include in the BUR. The TTE noted that Morocco did not refer to a joint submission anywhere in the BUR and that the BUR provides an update to the GHG inventory reported in the NC4.
7. The technical analysis of Morocco's BUR was conducted from 29 August to 2 September 2022 in Libreville, Gabon, and was undertaken by the following TTE, drawn from the UNFCCC roster of experts on the basis of the criteria defined in decision 20/CP.19, annex, paragraphs 2–6: Rehab Ahmed Hassan (former member of the CGE from Sudan), Juliana Bempah (Ghana), Ménouèr Boughedaoui (former member of the CGE from Algeria), Akram Hamza (Tunisia), Gervais Ludovic Itsoua Madzous (member of the CGE from Congo), Mwangi James Kinyanjui (Kenya), Traute Koether (Austria), Rocio Lichte (former member of the CGE from Germany), Giorgi Machavariani (Georgia), Philippe Missi Missi (Cameroon), Sandra Boitumelo Motshwanedi (former member of the CGE from South Africa), Sekai Ngarize (Zimbabwe) and Alexander Valencia (Colombia). Rocio Lichte and Sekai Ngarize were the co-leads. The technical analysis was coordinated by Pedro Torres and Gopal Joshi (secretariat).
8. 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 Morocco engaged in consultation<sup>1</sup> on the identification of capacity-building needs for the preparation of BURs and participation in the ICA process. Following the technical analysis of Morocco's third BUR, the TTE prepared and shared a draft summary report with Morocco on 7 December 2022 for its review and comment. Morocco, in turn, provided its feedback on the draft summary report on 6 March 2023.

9. The TTE finalized the summary report in consultation with the Party on 6 March 2023.

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

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

10. The scope of the technical analysis is outlined in decision 20/CP.19, annex, paragraph 15, 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:

(a) The identification of the extent to which the elements of information listed in paragraph 3(a) of the ICA modalities and guidelines (decision 2/CP.17, annex IV) 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 (decision 2/CP.17, annex III), 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).

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

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

12. The elements of information referred to in paragraph 10(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.

13. According to decision 20/CP.19, annex, paragraph 15(a), 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 12 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.

14. The current TTE noted improvements in the reporting in Morocco's third BUR compared with that in its previous BUR. Information on the GHG inventory reported in the Party's third BUR demonstrates that it has taken into consideration a few of the areas for enhancing the transparency of the extent of the information reported noted by the previous TTE in the summary report on the technical analysis of the Party's previous BURs.

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

## C. Technical analysis of the information reported

15. The technical analysis referred to in paragraph 10(b) above aims to increase the transparency of information reported by the 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.

16. 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.

17. 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

18. 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 decision 17/CP.8, annex, paragraphs 3–5, and they could report similar information in their BUR, which is an update of their most recently submitted NC.

19. In its third BUR, Morocco provided an update on its national circumstances, including a description of regional, national and local 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. Morocco reported on sectoral and national development strategies related to mitigation of climate change and on its adaptation strategy for the agriculture and water resources sectors. Morocco also reported information regarding national circumstances and constraints on the specific needs and concerns arising from the adverse effects of climate change and/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.

20. In addition, Morocco provided a summary of relevant information regarding its national circumstances in tabular and graphical format.

21. Morocco reported in its third BUR an update on its existing institutional arrangements relevant to the preparation of its NCs and BURs on a continuous basis. The description covers key aspects of the institutional arrangements, including the legal status and roles and responsibilities of the overall coordinating entity, the national inventory system, and a list of the different institutions and departments involved. Morocco reported updated information on its institutional framework for climate governance, namely on the creation by decree of the National Climate Change and Biodiversity Commission on 17 May 2020, which oversees the overall coordination and implementation of Morocco's commitments relating to climate change and biodiversity. Morocco also established, in 2021, an MRV platform for monitoring the implementation of mitigation actions.

22. Information on the legal framework relevant to the preparation of NCs on a continuous basis was not clearly reported in Morocco's BUR. During the technical analysis, the Party clarified that a legal framework is needed to ensure full implementation of the reporting requirements, taking into consideration the confidentiality of some of the data provided by private sector industry, before the disclosure of sensitive data.

23. The TTE noted that the transparency of the information reported on institutional arrangements could be enhanced by addressing the areas noted in paragraph 22 above, which could facilitate a better understanding of the information reported on institutional arrangements.

24. Morocco reported in its third BUR an update on its domestic MRV arrangements. The description covers key aspects of the institutional arrangements, including the development of an online platform, launched in April 2021 following testing and validation, which covers the GHG emissions inventory, monitoring of mitigation actions, and support needed and received. The platform provides direct access for contributors to report data and information on GHG emissions and mitigation actions. Morocco reported on planned steps to enable all stakeholders to input data in real time to facilitate reporting under the Paris Agreement, ensuring transition to the ETF.

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

25. As indicated in table I.1 in annex I, Morocco 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, contained in the annex to decision 17/CP.8.

26. Morocco submitted its third BUR in 2022 and the GHG inventories reported are for 2010, 2012, 2014, 2016 and 2018. The GHG inventories are consistent with the requirements for the reporting time frame.

27. GHG emissions and removals for the BUR covering the 2010–2018 inventories were estimated using the tier 1 methodology with default EFs from the 2006 IPCC Guidelines. The TTE commends the Party for using the 2006 IPCC Guidelines for its national GHG inventory.

28. Information on whether the tier 1 methodology and default EFs were used for all categories of the GHG inventory was not clearly reported in Morocco’s BUR; the Party indicated in the BUR that the tier 1 methodology was used for most sectors and gases. During the technical analysis, the Party clarified that, owing to a lack of country-specific data and other parameters, the tier 1 methodology and default EFs were applied for all categories of the GHG inventory without exception.

29. Information on activity levels and the sources of AD used was not clearly reported in Morocco’s BUR; the Party did not provide any references to the data sources used or any numerical values for the AD. During the technical analysis, the Party clarified that AD are available but are managed by different entities responsible for preparing the different sectors of the GHG inventory. Therefore, the capacity to provide such data in line with the reporting requirements differs by sector. However, the Party informed the TTE that data, with the exception of those with confidentiality restrictions, could be provided in future submissions.

30. Information on the Party’s total GHG emissions by gas for 2010–2018 is outlined in table 1 in Gg CO<sub>2</sub> eq. It shows an increase in emissions of 24.6 per cent with LULUCF since 2010 (72,979.00 Gg CO<sub>2</sub> eq).

Table 1  
**Greenhouse gas emissions by gas of Morocco for 2018**

<i>Gas</i>	<i>GHG emissions (Gg CO<sub>2</sub> eq) including LULUCF</i>	<i>% change 2010–2018</i>	<i>GHG emissions (Gg CO<sub>2</sub> eq) excluding LULUCF</i>	<i>% change 2010–2018</i>
CO <sub>2</sub>	63 636.00	26.7	65 384.80	24.5
CH <sub>4</sub>	14 094.50	19.0	14 092.60	19.1
N <sub>2</sub> O	13 108.20	20.2	13 107.00	20.2
HFCs	105.70	1 061.5	105.70	1 061.5
PFCs	NE	NA	NE	NA
SF <sub>6</sub>	NE	NA	NE	NA
Other	NA	NA	NE	NA
<b>Total</b>	<b>90 944.40</b>	<b>24.6</b>	<b>92 690.10</b>	<b>23.2</b>

31. Information on indirect GHG emissions was reported at the sectoral level, resulting in totals of 215.60 Gg nitrogen oxides, 223.10 Gg carbon monoxide, 96.50 Gg NMVOCs and 249.00 Gg sulfur dioxide, as calculated by the TTE for 2018.

32. Although Morocco provided summary information of its GHGs in CO<sub>2</sub> eq (BUR table 4), the information on GHG emissions on a gas-by-gas basis was not clearly reported in

Morocco's BUR. The TTE noted that the structure and category disaggregation of the summary information provided in the Party's BUR (table 4, p.53) does not correspond to the information outlined in tables 1–2 in the annex to decision 17/CP.8, where emissions must be reported on a gas-by-gas basis. The TTE also noted inconsistencies in the reporting of sectoral emissions: while emissions for the energy and agriculture sectors were reported in units of mass (Gg), emissions for the IPPU, LULUCF and waste sectors were reported in Gg CO<sub>2</sub> eq. These inconsistencies result in inconsistencies between the summary information reported in BUR table 4 and the sectoral tables. During the technical analysis, the Party clarified that QA/QC procedures are currently implemented at the sectoral level only and that each sector has varying capacity to report the information in line with the reporting requirements in terms of format, structure and units of reported data. The Party further clarified that more comprehensive implementation of QA/QC procedures is required for the preparation of its GHG inventory.

33. Morocco applied notation keys in some tables where numerical data were not provided. The use of notation keys was partially consistent with the UNFCCC reporting guidelines on BURs. For instance, notation keys were not used for the agriculture and LULUCF sectors, while for the IPPU sector the Party reported a number of gases and activities as "0.00" instead of using notation keys. During the technical analysis, the Party clarified that it should have used "NA" instead of reporting "0.00". The Party also clarified that QA/QC procedures are implemented at the sectoral level and that each sector has varying capacity to report the information in line with the reporting requirements, including those on the application of notation keys.

34. Information on some categories outlined in the UNFCCC reporting guidelines on BURs and the 2006 IPCC Guidelines was not clearly reported in Morocco's BUR. For example, electronics industry, incineration and open burning of waste, and other categories were not included in the tables in the BUR, as required by the UNFCCC reporting guidelines on BURs and, accordingly, no notation keys were used. During the technical analysis, the Party clarified that no emissions were estimated for those categories that do not appear in the tables in its BUR. Morocco explained that it preferred to report in the BUR tables only those categories for which it has calculated estimates.

35. Morocco reported comparable information addressing the sectoral reporting tables annexed to the Revised 1996 IPCC Guidelines.

36. Comparable information addressing the tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF was not clearly reported in Morocco's BUR. During the technical analysis, the Party clarified that it was unable to provide this information owing to a lack of spatial data on land use and that it views this as an important area for improving data availability.

37. The Party used the 2006 IPCC Guidelines for estimating emissions from the agriculture and LULUCF sectors. However, it reported LULUCF and agriculture separately, using the categories from the 2006 IPCC Guidelines for land (categories 3.B.1–3.B.6) and the structure and category nomenclature of the Revised 1996 IPCC Guidelines for agriculture. Information on how the Party mapped reporting categories between the 2006 IPCC Guidelines and the Revised 1996 IPCC Guidelines was not clear to the TTE. In addition, the TTE noted that categories 3.C (aggregate sources and non-CO<sub>2</sub> emissions) and 3.D (other) under the agriculture, forestry and other land use sector are not reflected in Morocco's GHG inventory and that, for the LULUCF sector, information is provided at the level of land categories but not at the level of land changes. During the technical analysis, the Party clarified that inventories are prepared at the sectoral level and that, owing to a lack of capacity, it continues to face challenges in harmonizing its reporting with the IPCC nomenclature and reporting format as it transitions to using the 2006 IPCC Guidelines.

38. The shares of emissions that different sectors contributed to the Party's total GHG emissions excluding LULUCF, as reported by the Party, in 2018 are reflected in table 2.

Table 2  
**Shares of greenhouse gas emissions by sector of Morocco for 2018**

<i>Sector</i>	<i>GHG emissions (Gg CO<sub>2</sub> eq)</i>	<i>% share<sup>a</sup></i>	<i>% change 2010–2018</i>
Energy	61 206.60	66.0	28.2
IPPU	5 667.60	6.1	–5.9
Agriculture	20 729.30	22.4	18.5
LULUCF	–1 745.60	NA	–23.1
Waste	5 086.60	5.5	26.8

<sup>a</sup> Share of total emissions without LULUCF.

39. Morocco reported the actual values of GWP used, which correspond to those provided by the IPCC in its AR4 based on the effects over a 100-year time-horizon of GHGs.

40. The energy sector includes eight key categories, of which energy industries (category 1.A.1) and transport (category 1.A.3) are the most important, contributing 38.8 per cent of total emissions from the energy sector in 2018.

41. The TTE noted that information on AD that are key to understanding the energy sector emissions (e.g. the type of fuel consumed by combustion activity or produced from mining activities) was not reported in Morocco's BUR. During the technical analysis the Party clarified why information on AD was not reported (see para. 29 above).

42. For the IPPU sector, 91.0 per cent of emissions are attributed to cement production (category 2.A.1), which is a key category. Emissions from cement production decreased by 8.7 per cent from 5,359.23 Gg CO<sub>2</sub> eq in 2010 to 4,891.85 Gg CO<sub>2</sub> eq in 2018.

43. Information on AD, including on consumption and production quantities for the different categories of the IPPU sector, was not reported in Morocco's BUR (see para. 29 above). Morocco provided information on F-gases for HFCs, PFCs and SF<sub>6</sub> in CO<sub>2</sub> eq, which was provided in aggregate form for HFCs and PFCs without disaggregating by type of gas. For cases where emission estimates were not available, the Party used notation keys or reported "0.00". The provision of information on PFCs and SF<sub>6</sub> constitutes an improvement since Morocco's second BUR, in which no information on these gases was reported owing to a lack of data. During the technical analysis, the Party clarified why AD was not reported (see para. 29 above) and that it requires data on imports and exports from the Moroccan industry in order to report disaggregated estimates of HFCs and PFCs and that steps are under way to improve the collection of data.

44. For the agriculture sector, the Party identified 11 key categories, including urine and dung deposited by grazing animals (category 3.D.a.3), enteric fermentation from dairy cattle (category 3.A.1.a), N<sub>2</sub>O emissions from crop residues (category 3.D.a.4) and enteric fermentation from sheep (category 3.A.2), which constitute the most relevant emissions sources in the sector.

45. Information was not reported on prescribed burning of savannahs (category 3.E), field burning of agricultural residues (category 3.F) or liming (category 3.G), or on the AD used to estimate emissions, including animal population, manure management systems or amounts of fertilizer used. During the technical analysis the Party clarified why such information was not reported (see para. 29 above).

46. For the LULUCF sector, Morocco reported annual GHG removals for 2010–2018. Overall, the net removals from the LULUCF sector fluctuated between a minimum of 1,585.80 Gg CO<sub>2</sub> eq in 2016 and a maximum of 2,270.60 Gg CO<sub>2</sub> eq in 2010.

47. Information on land (category 3.B) was not clearly reported in Morocco's BUR as the Party did not report the land changes or conversions within each of the land categories under category 3.B. As stated in the BUR (p.64), no information was reported on harvested wood products. Moreover, information on AD (e.g. areas of land and carbon stock changes) and their sources, which would facilitate an understanding of the estimates, was not provided in the BUR. During the technical analysis the Party clarified why information on AD was not reported (see para. 29 above).



48. For the waste sector, the Party reported GHG emissions from solid waste disposal (category 4.A) and wastewater treatment and discharge (category 4.D). The Party identified three key categories in the waste sector, with unmanaged waste disposal sites being the largest emissions source (emissions of 2,196.00 Gg CO<sub>2</sub> eq in 2018, an increase of 30.7 per cent between 2010 and 2018).

49. Information on biological treatment of solid waste (category 4.B) and incineration and open burning of waste (category 4.C) was not reported in the BUR. The TTE noted that important information on the underlying AD, such as annual amounts of solid waste, was not provided in the BUR (see para. 29 above). CH<sub>4</sub> emissions from uncategorized waste disposal sites (category 4.A.3) were reported as “IE”. However, it was not clear where in the inventory the emissions were included. During the technical analysis, the Party clarified that CH<sub>4</sub> emissions from uncategorized waste disposal sites should have been reported as “NA”. However, the TTE notes that the notation key “NO” could be more appropriate if there are no uncategorized waste disposal sites in Morocco.

50. The BUR provides an update to the GHG inventory reported in the Party’s second BUR (submitted in December 2019). Although the BUR and NC4 (submitted in December 2021) were considered a joint submission by the Party, information reported in the BUR provides an update of the Party’s NC4 and second BUR, which addresses anthropogenic emissions and removals for 2004, 2006, 2008, 2010, 2012, 2014, 2016 and 2018 using the 2006 IPCC Guidelines. The update was carried out for 2010, 2012, 2014, 2016 and 2018 using the methodologies contained in the 2006 IPCC Guidelines, thus generating a consistent time series for 2010–2018 reported in the BUR.

51. Information on updates to GHG emission estimates prior to 2010 was not reported in Morocco’s BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that it decided to report updates of GHG emission estimates for 2010 onward because 2010 is the starting year of the Party’s baseline scenarios and, moreover, it does not have sufficient human capacity at the sectoral level to prepare the inventories for the years prior to 2010.

52. Morocco described in its BUR the institutional framework for the preparation of its GHG inventory for 2010–2018. The overall coordinating entity of the national inventory system operates under the Environment Department of the Ministry of Energy Transition and Sustainable Development and is composed of the National Inventory Commission, which has a national inventory coordinator, and the National Inventory Unit, which has sector coordinators for the respective sectors of the GHG inventory. The preparation of the GHG inventory, including the collection of data, is mostly carried out at the sectoral level, and the roles and responsibilities of the various actors are specified in a decree enacted in 2019.

53. Information on the institutions involved in GHG inventory preparation at the sectoral level, including data providers and the arrangements in place for collecting and sharing data on a continuous basis, was not clearly reported in Morocco’s BUR. An overview of data sources and institutions involved in data collection was not provided, nor was information reported on any challenges associated with data collection. During the technical analysis, the Party highlighted its sectoral approach to preparing the GHG inventory and clarified that many aspects of the inventory compilation process related to data, including collection, sharing and QA/QC procedures, differ widely across sectors. The Party also highlighted some necessary improvements, in particular with regard to the QA/QC procedures for the national inventory system as a whole, as well as at the sectoral level.

54. Morocco reported that a key category analysis was performed for the level of emissions and trend in emissions. Twenty-five key categories and main gases were identified, of which energy industries (category 1.A.1) and transport (category 1.A.3) were the most important.

55. Information on the gases associated with the key categories identified, which were reported as aggregate amounts in CO<sub>2</sub> eq without specifying the gases (e.g. CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O), was not clearly reported in Morocco’s BUR. During the technical analysis, the Party clarified that estimates are available by category and type of gas and therefore would be able to provide the key category analysis by type of gas.

56. Morocco reported information on CO<sub>2</sub> fuel combustion emissions using both the sectoral and the reference approach. The information reported in BUR table 8 indicates that the difference between the estimates calculated using the two approaches was 2.3 per cent for 2018.

57. The TTE noted that for the comparison between the reference and sectoral approaches the Party included emissions of CH<sub>4</sub> and N<sub>2</sub>O in the total emissions under the sectoral approach, which were reported in CO<sub>2</sub> eq. The TTE notes that for the comparison between the reference and sectoral approaches, only CO<sub>2</sub> emissions could be used.

58. Information on international aviation and marine bunker fuels was not reported in Morocco's BUR. During the technical analysis, the Party clarified that emissions from international bunker fuels were not estimated owing to a lack of data required from the respective department and that only categories for which emissions were estimated were reported in the tables in the BUR. The Party also clarified that it views this as an important area for improving overall data availability.

59. Morocco reported information on the uncertainty assessment (level and trend for 2010–2018) of its national GHG inventory. The uncertainty analysis was based on the tier 1 approach using default uncertainty values from the 2006 IPCC Guidelines for AD and EFs, which were provided in annex 3 to the BUR, and covers all source categories and all direct GHGs. The results obtained, as reported in the BUR, reveal that the level uncertainty for emissions (including LULUCF) is 25.6 per cent and the trend uncertainty is 32.0 per cent.

60. The TTE noted that the transparency of the information reported on GHG inventories could be enhanced by addressing the areas noted in paragraphs 28–29, 32–34, 36–37, 41, 43, 45, 47, 49, 51, 53, 55 and 57–58 above, which could facilitate a better understanding of the information reported on GHG inventories.

61. In paragraph 62 of the summary report on the technical analysis of Morocco's second BUR, the previous TTE noted areas where the transparency of the reporting on GHG inventories could be further enhanced. The current TTE noted the improvements in the reporting on F-gases and uncertainties (see paras. 43 and 59 above) and commends the Party for enhancing the transparency of its reporting.

62. Morocco reported in its BUR information on the development of an online MRV platform, which includes a component specific to the GHG emissions inventory. This platform has been developed to enhance compliance with requirements under the ETF and to enable the Party to provide the necessary information for monitoring progress on the implementation of its NDCs. The TTE commends the Party for reporting on its proactive approach to preparing for ETF implementation.

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

63. As indicated in table I.2, Morocco 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.

64. The information reported provides a comprehensive overview of the Party's mitigation actions and their effects. In its BUR, Morocco reported information on its national context and framed its national mitigation planning and actions in the context of its NDC. Morocco has clustered mitigation actions into nine sectors: electricity generation, industry, cement, phosphate, buildings, transport, waste, agriculture and forestry. Morocco reported that climate change has been mainstreamed and integrated into its relevant development plans and strategies, including the national energy strategy, national logistics strategy, national waste strategy, wastewater treatment programme, green generation strategy 2020–2030, Moroccan forest strategy 2020–2030 and national programme for urban public transport. Most of the mitigation actions are in the agriculture and buildings sectors. Further, the implemented mitigation actions are expected to contribute to estimated emission reductions of 408,492.20 Gg CO<sub>2</sub> eq for 2020–2030, with electricity generation and phosphate industry being the main sources of emission reductions (34.5 and 15.8 per cent respectively). In the

BUR, Morocco provided information on the costs, by measure and sector, of ensuring implementation of the mitigation actions.

65. Morocco reported information on GHG projections under two scenarios: the baseline scenario where no mitigation actions are considered, and the mitigation scenario, where projections considered the impact of the policies and measures in each of the nine sectors referred in paragraph 64 above.

66. The Party reported a summary of its mitigation actions in tabular format in accordance with decision 2/CP.17, annex III, paragraph 11, and reported a summary of its sectoral mitigation actions in tabular format in accordance with decision 2/CP.17, annex III, paragraph 11. The Party also reported information on its mitigation actions in narrative format.

67. Consistently with decision 2/CP.17, annex III, paragraph 12(a), Morocco clearly reported the names of mitigation actions or groups of actions and coverage (sector) in the BUR (tables 16–25 and annex 4). A clear description of mitigation actions, as well as information on quantitative goals, was provided in the BUR.

68. The Party reported general information on the methods used for estimating emission reductions, tracking implementation progress and verifying the achievement of goals in the electricity generation and agriculture sectors and indicated that the LEAP software and Exact model were used for assessing the mitigation potential of those sectors. The Party reported nine actions or groups of actions as ongoing in annex 4 to the BUR.

69. The Party also reported information on 16 planned actions or groups of actions in the energy and waste sectors, but did not report information on their status of implementation and did not mention any specific institutional actions or approval of regulatory instruments for the mitigation actions referred to in annex 4 of the BUR. During the technical analysis, Morocco explained that the project developers have not yet estimated the annual emissions avoided to enable a comparison of actual emission reductions with planned emission reductions.

70. Information on coverage of gases and progress indicators was not reported in Morocco's BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that the estimated emission reductions were quantified in CO<sub>2</sub> eq and that it requires support to enable it to report by type of gas (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and F-gases). Morocco also clarified that the MRV system contains a set of progress indicators at the national and sectoral level.

71. The mitigation actions related to energy and electricity generation focus mainly on promoting renewable energy sources, in particular solar and wind, including seven wind farms, five solar power plants, one hydraulic power station and the extension of the capacity of a combined cycle power station. For 2020–2030, mitigation actions in the electricity generation sector are expected to achieve emission reductions of about 140,795.20 Gg CO<sub>2</sub> eq compared with the baseline scenario, while mitigation actions in the buildings sector are expected to achieve emission reductions of about 24,689.00 Gg CO<sub>2</sub> eq compared with the baseline scenario, mainly by using LED lights in residential buildings, installing solar panels for self-consumption and introducing energy efficiency standards for air conditioning and refrigeration.

72. For the industry and cement sectors, the mitigation actions focus mainly on improving energy efficiency and use of biomass as well as use of waste in the cement industry (e.g. used tyres, pomace, ash, sludge and household waste). Morocco reported that it will use natural gas in the industry sector to substitute the fuel used in thermal processes. Emission reductions for 2020–2030 are estimated to be 41,339.70 Gg CO<sub>2</sub> eq, compared with the baseline scenario. Morocco also reported mitigation actions for the cement and phosphates production industries, with anticipated emission reductions of about 75,766.30 Gg CO<sub>2</sub> eq for 2020–2030, compared with the baseline scenario.

73. The mitigation actions related to the transport sector focus on improving the environmental standards of vehicles and implementing a bonus-malus system that promotes purchases of vehicles that are more energy efficient. The anticipated emission reductions in

the transport sector amount to 19,703.50 Gg CO<sub>2</sub> eq for 2020–2030, compared with the baseline scenario.

74. In the agriculture sector, mitigation actions focus on increasing CO<sub>2</sub> removals by developing plantations of fruit trees, including olive, citrus and date palm trees. Anticipated emission reductions are estimated at 57,435.10 Gg CO<sub>2</sub> eq for 2020–2030, compared with the baseline scenario.

75. The Party reported mitigation actions in the forestry sector, most of which are related to recovery of ecosystems, with estimated emission reductions of about 17,624.40 Gg CO<sub>2</sub> eq for 2020–2030, compared with the baseline scenario.

76. The mitigation actions related to the waste sector focus on mechano-biological treatment and co-incineration of household waste. Anticipated emission reductions amount to 31,138.90 Gg CO<sub>2</sub> eq for 2020–2030, compared with the baseline scenario.

77. Morocco reported information on methodologies and assumptions for the electricity generation and agriculture sectors. The Party provided generic information on steps taken or envisaged to achieve both planned and ongoing mitigation actions in the energy, transport, industry, phosphates, cement, buildings, waste and forestry sectors.

78. Information on the methodologies and assumptions used to estimate emission reductions in the industry, cement, phosphate, buildings, transport, waste and forestry sectors was not clearly reported in Morocco's BUR. In addition, information on the different assumptions used to develop both the baseline and the mitigation scenarios was not reported in the BUR. During the technical analysis, Morocco clarified that information on methodologies and assumptions used to develop both the mitigation and the baseline scenarios for each sector was provided in the NC4.

79. Morocco did not provide information on its involvement in international market mechanisms. During the technical analysis, Morocco informed the TTE that initiatives on market mechanisms exist but are not yet operational, that it is seeking resources and support to finalize their operationalization, and that it is aware of the need to document such information.

80. Morocco reported information on its domestic MRV arrangements in accordance with decision 2/CP.17, annex III, paragraph 13. The information reported indicates that Morocco is in the process of implementing a domestic MRV system for mitigation actions. It includes progress indicators at the national and sectoral level, and it will support the monitoring of data collection and assess the implementation progress of NDCs and mitigation actions by sector.

81. The TTE noted that the transparency of the information reported on mitigation actions could be enhanced by addressing the areas noted in paragraphs 69–70 and 78–79 above, which could facilitate a better understanding of the information reported on mitigation actions.

82. In paragraph 83 of the summary report on the technical analysis of Morocco's second BUR, the previous TTE noted areas where the transparency of the reporting on mitigation actions could be further enhanced.

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

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

84. Morocco clearly reported information on constraints and gaps, and related financial, technical and capacity-building needs in accordance with decision 2/CP.17, annex III, paragraph 14. In its BUR, Morocco identified difficulties in collecting data on energy consumption at the sectoral level and the lack of a legal framework for the provision of disaggregated data at the plant level as constraints. The Party also reported the need to identify the capacity-building needs of private and public stakeholders at the national, regional and local level. Morocco reported that its financial, technical and capacity-building

needs are primarily in the areas of sustainability of human resources at the institutional level for reporting on a regular basis, tracking the progress of implementation of its mitigation actions, collecting disaggregated data at the plant level, and involving all stakeholders in providing data and information through the MRV system.

85. Morocco reported information on financial resources and capacity-building in accordance with decision 2/CP.17, annex III, paragraph 15. The information reported indicates that Morocco received capacity-building support from the Interprofessional Technical Centre for the Study of Air Pollution (CITEPA, France) to develop and implement the online platform for the MRV system. In its BUR, Morocco reported that it received USD 852,000 from the GEF, which included allocation for preparing both its second BUR and its NC4.

86. Information on support received for the preparation of Morocco's third BUR was not reported in the BUR. During the technical analysis, the Party clarified that it did not receive any funding for the preparation of its third BUR, but that it did use funds remaining from the preparation of the second BUR and NC4.

87. Information on technology needs and technology transfer was not clearly reported in Morocco's BUR. Morocco did not report on financial support from bilateral cooperation and donors other than the GEF and the Green Climate Fund. During the technical analysis, the Party clarified that a technology needs assessment would identify what is needed at the sectoral level and informed the TTE that it has recently received funding from the GEF to conduct one. The Party also clarified that it is facing constraints in relation to gathering information and reporting on the technical support and technology transfer received from funded projects.

88. The TTE noted that the transparency of the information reported on needs and support received could be enhanced by addressing the areas noted in paragraphs 86–87 above, which could facilitate a better understanding of the information reported on needs and support received.

89. In paragraph 91 of the summary report on the technical analysis of the Party's second BUR, the previous TTE noted areas where the transparency of the reporting on constraints, gaps, needs and support needed and received could be enhanced. The current TTE noted the improvements in Morocco's reporting on constraints and difficulties at the sectoral and national level, and in relation to the national system, by providing more detailed information in its third BUR such as the operationalization of the MRV platform, the establishment of the National Climate Change and Biodiversity Commission and the different sectoral mitigation initiatives implemented by Morocco, and commends the Party for enhancing the transparency of its reporting.

## **5. Any other information**

90. Morocco reported some information on adaptation actions that may lead to GHG emission reductions, without providing estimations of such reductions. During the technical analysis, Morocco clarified that stakeholders have started to provide data for use in the MRV system, which will enable the measuring and monitoring of emission reductions.

91. Morocco reported for the first time in its third BUR on mainstreaming climate change at the municipal and regional level in climate policies and territorial development projects that will be implemented by the regional and local governments in Morocco. It also reported in its NC4 on many adaptation and mitigation initiatives in Morocco and in the Mediterranean region.

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

92. In consultation with Morocco, the TTE identified the following needs for capacity-building that could facilitate the preparation of subsequent BURs and participation in ICA:

(a) Enhancing the capacities of institutions and sectors to improve the MRV system, render it operational on a sustainable and continuous basis, facilitate the alignment

of submissions from the Party with the requirements of the UNFCCC reporting guidelines on BURs and allow for QA/QC and verification procedures to be applied to the entire BUR prior to its submission;

(b) Improving data-collection procedures by enhancing the roles of the General Confederation of Moroccan Enterprises and professional associations, enabling them to obtain and report disaggregated data in a systematic manner for the various sectors of the GHG inventory, including for the estimation of emissions from international aviation and marine bunker fuels, the estimation of F-gases by gas and the determination of land-use categories in accordance with the 2006 IPCC Guidelines;

(c) Enhancing the implementation of QA/QC and internal verification procedures as part of the institutional arrangements for the GHG inventory, both at the sectoral level and at the level of the inventory compilers, in order to harmonize and improve coherence and consistency across all sectoral sections of the GHG inventory; enable reporting of all sectors on a gas-by-gas basis in the units and formats required by the UNFCCC reporting guidelines on BURs; use notation keys where no estimates are reported; harmonize the nomenclature of the GHG inventory categories with that provided in the 2006 IPCC Guidelines; and implement procedures to check the overall accuracy and consistency of the inventory prior to publication of the BUR;

(d) Enhancing the role of the entity responsible for compiling the national inventory to enable the preparation – on the basis of the sectoral inventories – of a consistent and coherent national GHG inventory in line with the UNFCCC reporting guidelines on BURs for all elements to be included in the BUR (e.g. the structure, units of measurement, application of notation keys and category disaggregation in line with the 2006 IPCC Guidelines);

(e) Enhancing capacity to quantify the emission reductions of mitigation actions by type of gas (e.g. CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and F-gases);

(f) Enhancing capacity for using assessment tools and methods to conduct technology needs and technology transfer assessments at the national, regional and sectoral level.

93. The TTE noted that, in addition to those identified during the technical analysis, Morocco reported the following capacity-building needs in its BUR, which include capacity-building needs for future BURs and GHG inventory preparation:

(a) Strengthening support for human capacity and coordination among the entities responsible for preparing the different sectors of the inventory to ensure the sustainability, continuity and completeness of the information reported in the BUR;

(b) Operationalizing all aspects of the MRV online platform;

(c) Collecting and refining AD;

(d) Developing EFs for improving the accuracy of the GHG inventory.

### III. Conclusions

94. The TTE conducted a technical analysis of the information reported in the third BUR of Morocco 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; constraints and gaps, and related financial, technical and capacity-building needs, including a description of support needed and received; the level of support received to enable the preparation and submission of BURs; and domestic MRV. During the technical analysis, additional information was provided by Morocco on institutional arrangements for the preparation of the GHG inventory, funding for the preparation of the third BUR, and updated mitigation actions. The TTE concluded that the information analysed is partially transparent.

95. Morocco reported an update on the institutional arrangements relevant to the preparation of its BURs. The National Climate Change and Biodiversity Commission is the entity responsible for the overall coordination and implementation of Morocco's commitments related to climate change and biodiversity. It has taken steps to establish institutional arrangements that enable sustainable preparation of its BURs, such as developing the MRV platform to facilitate sectoral information transfer, covering the three areas namely, the GHG inventory, monitoring of mitigation actions, and support needed and received.

96. In its third BUR, submitted in 2022, Morocco reported information on its national GHG inventory for 2010, 2012, 2014, 2016 and 2018. This included 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 as well as the precursor gases and F-gases. The inventory was developed on the basis of the 2006 IPCC Guidelines. The total GHG emissions for 2018 were reported as 92,690.10 Gg CO<sub>2</sub> eq (excluding LULUCF) and 90,944.40 Gg CO<sub>2</sub> eq (including LULUCF). Twenty-five key categories and main gases were identified, of which energy industries (category 1.A.1) and transport (category 1.A.3) were the most important.

97. Information on activity levels and the sources of AD used was not clearly reported in Morocco's BUR; the Party did not provide any references to the data sources used in the inventory or any numerical values for the AD. The Party did not report a summary of its GHG emissions on a gas-by-gas basis and only partially followed the category disaggregation and use of notation keys from the 2006 IPCC Guidelines. Information on international aviation and marine bunker fuels was not reported in Morocco's BUR. During the technical analysis, Morocco clarified that the QA/QC procedures applied differ across sectors and that it is working to improve the overall inventory verification process. The Party acknowledged that the overall availability of data is an important area for improvement.

98. Morocco reported information on mitigation actions and their effects in both tabular and narrative format, including estimated emission reductions of 408,492.20 Gg CO<sub>2</sub> eq between 2020 and 2030. The Party framed its national mitigation planning and actions in the context of its national strategies and NDC. Morocco reported planned and ongoing mitigation actions in nine sectors, namely electricity generation, industry, cement, phosphate, buildings, transport, waste, agriculture and forestry. The highest estimated emission reduction was reported for the electricity generation sector (140,795.20 Gg CO<sub>2</sub> eq between 2020 and 2030).

99. The Party reported information on its MRV arrangements for mitigation actions. However, information was not reported on methodologies and assumptions used for estimating emission reductions, or for coverage of gases and progress indicators.

100. Morocco reported information on key constraints, gaps and related needs, including on the identification of technology needs and assessment of technology transfer implemented in the country. Information was also reported on the capacity-building support received for designing and implementing the online platform for the MRV system for monitoring the implementation of mitigation actions.

101. The current TTE noted improvements in the reporting in the Party's third BUR compared with that in its second BUR. The information reported demonstrates that the Party has taken into consideration some of the areas for enhancing the transparency of the information reported noted by the TTE in the summary report on the technical analysis of the second BUR. However, improvements are ongoing, and the Party took note during the technical analysis of outstanding areas for future improvement.

102. The TTE, in consultation with Morocco, identified the six capacity-building needs listed in chapter II.D above and needs for capacity-building that aim to facilitate 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. Morocco prioritized the capacity-building needs referred to in paragraph 92(a–c) and 92(e) above.

## Annex I

### Extent of the information reported by Morocco in its third biennial update report

Table I.1

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

<i>Decision</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.	Yes	Morocco submitted its third BUR in April 2022; the GHG inventories reported are for 2010, 2012, 2014, 2016 and 2018.
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	Morocco 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.	No	Morocco did not provide any updated data on activity levels.
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	The level of information reported was not comparable; information on land changes or conversions within each of the land categories was not provided.
	(b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines.	Partly	The sectoral tables contain comparable information but do not follow the structure and format of the 2006 IPCC Guidelines.
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.	Partly	The Party provided a consistent time series covering 2010, 2012, 2014, 2016 and 2018. However, the years back to 1994 were not reported in the third BUR, although they were included in previous NCs.



<i>Decision</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 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 1994, 2000 and 2004–2008, although it was reported in previous NCs.
Decision 2/CP.17, annex III, paragraph 9	The inventory section of the BUR should consist of a national inventory report as a summary or as an update of the information contained in decision 17/CP.8, annex, chapter III (National greenhouse gas inventories), including: <p>(a) Table 1 (National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and greenhouse gas precursors);</p> <p>(b) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF<sub>6</sub>).</p>	Partly	The information reported by the Party does not follow the structure of table 1, as not all categories were included and estimates were not provided on a gas-by-gas basis.
Decision 2/CP.17, annex III, paragraph 10	Additional or supporting information, including sector-specific information, may be supplied in a technical annex.	Yes	The Party submitted a GHG inventory report for 2004–2018 as separated document.
Decision 17/CP.8, annex, paragraph 12	Non-Annex I Parties are also encouraged, to the extent possible, to undertake any key source analysis as indicated in the IPCC good practice guidance to assist in developing inventories that better reflect their national circumstances.	Yes	
Decision 17/CP.8, annex, paragraph 13	Non-Annex I Parties are encouraged to describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved.	Partly	Information on procedures and arrangements for data collection at the sectoral level and on the role of the institutions involved was not reported.
Decision 17/CP.8, annex, paragraph 14	Each non-Annex I Party shall, as appropriate and to the extent possible, provide in its national inventory, on a gas-by-gas basis and in units of mass, estimates of anthropogenic emissions of: <p>(a) CO<sub>2</sub>;</p> <p>(b) CH<sub>4</sub>;</p> <p>(c) N<sub>2</sub>O.</p>	Partly	
Decision 17/CP.8, annex, paragraph 15	Non-Annex I Parties are encouraged, as appropriate, to provide information on anthropogenic emissions by sources of: <p>(a) HFCs;</p> <p>(b) PFCs;</p> <p>(c) SF<sub>6</sub>.</p>	Yes	
Decision 17/CP.8, annex, paragraph 16	Non-Annex I Parties are encouraged, as appropriate, to report on anthropogenic emissions by sources of other GHGs, such as: <p>(a) Carbon monoxide;</p> <p>(b) Nitrogen oxides;</p>	Yes	PFCs were reported as “NE”. SF <sub>6</sub> was reported as “0.00”.

<i>Decision</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>
	(c) NMVOCs.	Yes	
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.	Yes	
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.	Yes	
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.	NA	The Party used the GWP provided in the AR4.
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;	Yes	
	(b) Explanation of the sources of EFs;	Yes	
	(c) Explanation of the sources of AD;	No	
	(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;		
	(ii) Methodologies;		
	(iii) EFs;		
	(iv) AD;		

<i>Decision</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>
	(e) Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building.	Yes	
Decision 17/CP.8, annex, paragraph 22	Each non-Annex I Party is encouraged to use tables 1–2 of the guidelines annexed to decision 17/CP.8 in reporting its national GHG inventory, taking into account the provisions established in paragraphs 14–17. 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	The Party did not follow the structure and format of tables 1–2 of the guidelines annexed to decision 17/CP.8. Notation keys were partly used.
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.	Yes	

*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 decision 2/CP.17, paras. 3–10 and 41(g). 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, contained in the annex to decision 17/CP.8. 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 third biennial update report of Morocco**

<i>Decision</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.	Yes	
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	Information on coverage of gases and progress indicators was not provided for all mitigation actions or groups of actions.
	(b) Information on:		

<i>Decision</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>
	(i) Methodologies;	Partly	Morocco did not provide details on the methodology used for developing the mitigation and baseline scenarios for each of the nine sectors indicated in its BUR.
	(ii) Assumptions;	Partly	No clear assumptions or key parameters for the baseline and mitigation scenarios were reported for any sector.
	(c) Information on:		
	(i) Objectives of the action;	Yes	
	(ii) Steps taken or envisaged to achieve that action;	Yes	
	(d) Information on:		
	(i) Progress of implementation of the mitigation actions;	Yes	
	(ii) Progress of implementation of the underlying steps taken or envisaged;	Partly	Morocco provided generic statements on the mitigation actions in each sector but made no mention of any specific institutional actions or approval of regulatory instruments for the mitigation actions referred to in annex 4 to the BUR.
	(iii) Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible;	Yes	
	(e) Information on international market mechanisms.	No	
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 decision 2/CP.17, annex III, paras. 11–13.

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 third biennial update report of Morocco**

<i>Decision</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:		
	(a) Constraints and gaps;	Yes	
	(b) Related financial, technical and capacity-building needs.	Yes	
	Non-Annex I Parties should provide:		

<i>Decision</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 /CP.17, annex III, paragraph 15	(a) Information on financial resources received, technology transfer and capacity-building received;	Partly	Information on technology transfer was not reported.
	(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	Information on financial and technical support received for the preparation of the third BUR was not reported.
Decision /CP.17, annex III, paragraph 16	With regard to the development and transfer of technology, non-Annex I Parties should provide information on:		
	(a) Nationally determined technology needs;	No	
	(b) Technology support received.	No	

*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 decision 2/CP.17, annex III, paras. 14–16.

## Annex II

### Reference documents

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

IPCC. 1997. *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*. JL Houghton, LG Meira Filho, B Lim, et al. (eds.). Paris: IPCC/Organisation for Economic Co-operation and Development/International Energy Agency. Available at <https://www.ipcc-nggip.iges.or.jp/public/gl/invs1.html>.

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#### C. Other documents

The following references may not conform to UNFCCC editorial style as some have been reproduced as received:

Projet de préparation du deuxième rapport biennal actualise et de la quatrième communication nationale dans le cadre de la CCNUCC, projet QCN – BUR2, Rapport de mise à jour de l’inventaire national des émissions des gaz à effet de serre, rapport final 2004–2018.

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