



United Nations

FCCC/SBI/ICA/2021/TASR.1/CUB



Framework Convention on
Climate Change

Distr.: General
19 November 2021

English only

Technical analysis of the first biennial update report of Cuba submitted on 23 November 2020

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. 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 Cuba, 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
BUR	biennial update report
CDM	clean development mechanism
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
EEA	European Environment Agency
EF	emission factor
EMEP	Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe
ETF	enhanced transparency framework under the Paris Agreement
GHG	greenhouse gas
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
MRV	measurement, reporting and verification
N ₂ O	nitrous oxide
NA	not applicable
NAMA	nationally appropriate mitigation action
NC	national communication
NE	not estimated
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 ₆	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. 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 Cuba, 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, Cuba submitted its first BUR on 23 November 2020 as a summary of parts of its NC3.
6. During the technical analysis, Cuba clarified that it is a small island developing State and as such submitted its BUR at its discretion.
7. A desk analysis of Cuba's BUR was conducted remotely from 8 to 12 March 2021 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: Rémi D'Annunzio (France), Fernando Farias (former member of the Consultative Group of Experts from Chile), Adriana Coppola Gonzalez (Costa Rica), Agustin Jose Inthamoussu (Uruguay), Maria Jose Lopez (Belgium), Marcela Itzel Olguin-Alvarez (Mexico), Jose Manuel Ramirez Garcia (Spain), Virginia Sena Cianci (member of the Consultative Group of Experts from Uruguay), Alexander Valencia (Colombia) and Craig Wayson (United States of America). Ms. Lopez and Ms. Sena Cianci were the co-leads. The technical analysis was coordinated by Karen Ortega (secretariat).
8. During the technical analysis, in addition to the written exchange, through the secretariat, to provide technical clarifications on the information reported in the BUR, the TTE and Cuba engaged in consultation¹ on the identification of capacity-building needs for the preparation of BURs and participation in the ICA process. Following the technical analysis of Cuba's first BUR, the TTE prepared and shared a draft summary report with Cuba on 17 June 2021 for its review and comment. Cuba, in turn, provided its feedback on the draft summary report on 13 September 2021.
9. The TTE responded to and incorporated Cuba's comments referred to in paragraph 8 above and finalized the summary report in consultation with the Party on 21 October 2021. The TTE finalized the summary report in consultation with the Party on 9 November 2021.

¹ The consultation was conducted via videoconferencing.

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 Cuba'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 annex I.

C. Technical analysis of the information reported

14. 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.

15. 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.

16. 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

17. 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.

18. Cuba 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 Cuba's ability to deal with mitigating and adapting to climate change, as well as 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.

19. In addition, Cuba provided a summary of relevant information regarding its national circumstances in tabular format.

20. Cuba transparently reported in its first BUR information on its existing and planned 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, namely CUBAENERGY, the Centre for Information Management and Energy Development, under the Ministry of Science, Technology and Environment; the involvement and roles of other institutions and experts, such as providing technical inputs; QA/QC procedures; and provisions for public consultation and other forms of stakeholder engagement. The TTE noted planned improvements to the arrangements reported in the BUR, including developing an MRV component as part of the foundation for establishing a fully functional MRV system in Cuba by 2025.

21. Cuba reported in its first BUR information on its domestic MRV arrangements. The description covers key aspects of the institutional arrangements, including the government institution responsible for coordinating progress towards implementing the ETF (the Ministry of Science, Technology and Environment) and other ministries and government institutes responsible for producing and compiling the necessary data for the national GHG inventory, and a detailed road map for meeting the reporting requirements under the ETF. The MRV arrangements are designed at the national level and cover three main areas: the BUR and NC preparation processes, the GHG inventory system and the preparation of NAMAs. The system being developed is expected to be operational by 2025 provided that the necessary resources are available, bearing in mind the national circumstances. It will build on the existing systems, processes and infrastructure, rendering it cost-effective.

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

22. As indicated in table I.1, Cuba 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.

23. Cuba submitted its first BUR in 2020 and the GHG inventory reported is for 1990–2016. The GHG inventory is consistent with the requirements for the reporting time frame.

24. GHG emissions and removals for the BUR covering the 1990–2016 inventories were estimated using mostly tier 1 methodology from the 2006 IPCC Guidelines, except for category 3.B.1.a, for which tier 1 methodology from the Revised 1996 IPCC Guidelines was used. Tier 2 methodology was used for categories 2.A.1 and 2.B.2 in the IPPU sector and for category 3.A.1 in the AFOLU sector. For the AFOLU sector, methodologies from the 2006 IPCC Guidelines were used to estimate emissions for categories 3.A and 3.C but category 3.D was reported as “NE”. The TTE commends the Party for using the most recent IPCC guidelines.

25. Information on where tier 2 methodology was used was not clearly reported in Cuba's BUR. The information reported in tabular format in annexes 1–2 to the BUR is not fully

consistent with that provided in textual format in section 2.1.3 of the BUR. The information reported on the categories for which country-specific EFs or parameters were used, and where tier 2 methodology was thus applicable, is not consistent. During the technical analysis, the Party clarified that only categories 2.A.1, 2.B.2, 3.A.1.a.i and 3.A.1.a.ii were estimated using country-specific EFs.

26. Information on sources of AD and EFs was clearly reported in the BUR by including the sources for each of the estimated categories in the table in annex 1. However, country-specific EFs used were not reported in the BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party presented a table with the country-specific factors used for livestock subcategories. Also, the Party confirmed that the clarity and transparency of the information reported in the BUR can be improved and this will be prioritized in preparing future reports.

27. Additionally, the AD used for the energy, IPPU, AFOLU (e.g. for number of livestock, amount of fertilizer used, forest land remaining forest land) and waste sectors were not reported in the BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party confirmed that the clarity and transparency of the information reported in the BUR can be improved and this will be prioritized in preparing future reports.

28. Information on the Party’s total GHG emissions by gas for 1990–2016 is outlined in table 1 in Gg CO₂ eq. It shows a decrease in emissions of 39.7 per cent including land and HWP and other emissions since 1990 (reported as 38,262.97 Gg CO₂ eq in the BUR) and a decrease of 7.8 per cent without land and HWP since 1990 (reported as 54,281.52 Gg CO₂ eq in the BUR).

Table 1
Greenhouse gas emissions by gas of Cuba for 2016

<i>Gas</i>	<i>GHG emissions (Gg CO₂ eq) including land and HWP^a</i>	<i>% change 1990–2016</i>	<i>GHG emissions (Gg CO₂ eq) excluding land and HWP^a</i>	<i>% change 1990–2016</i>
CO ₂	4 722.31	–70.3	31 730.01	–0.6
CH ₄	12 295.20	–8.4	12 295.20	–8.4
N ₂ O	6 048.94	–32.4	6 048.94	–32.4
HFCs	NE	NA	NE	NA
PFCs	NE	NA	NE	NA
SF ₆	NE	NA	NE	NA
Other	NA	NA	NA	NA
Total	23 066.45	–39.7	50 074.15	–7.8

^a 2006 IPCC Guidelines AFOLU category 3.B (land) and, if reported, 3.D (HWP (3.D.1) and other emissions (3.D.2)).

29. Information on HFC and PFC emissions on a gas-by-gas basis and precursor gas emissions was not reported in Cuba’s BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that no arrangements are in place for obtaining the AD, parameters and expert judgment necessary to estimate HFC and PFC emissions on a gas-by-gas basis. Additionally, the Party clarified that it did not prioritize obtaining information on precursor gas emissions when compiling the inventory using the 2006 IPCC Guidelines for the first time. It also clarified that it intends to include estimates for precursor gases in future reports, prepared using the most recent version of the EMEP/EEA air pollutant emission inventory guidebook, and to perform pertinent recalculations for the previous years of the time series.

30. Cuba applied notation keys in tables where numerical data were not provided. The use of notation keys was consistent with the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties. Categories and gases in some sectors were reported as “NE”.

31. Comparable information addressing the tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF was not reported in Cuba’s BUR and the reason for this was not clear to the TTE. Cuba reported one of the land-use categories (3.B.1.a forest land remaining forest land) but the corresponding worksheet was not included. During the

technical analysis, the Party clarified that the tables were not included because the inventory compilers did not have the worksheet for that subcategory when preparing the report.

32. Comparable information addressing the sectoral reporting tables annexed to the Revised 1996 IPCC Guidelines was not reported in Cuba's BUR and the reason for this was not clear to the TTE. Cuba included comparable information on emissions and removals of direct GHGs in annex 3 to the BUR but information on precursor gases was not reported, as stated in paragraph 29 above.

33. 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 reported by the Party, in 2016 are reflected in table 2.

Table 2
Shares of greenhouse gas emissions by sector of Cuba for 2016

<i>Sector</i>	<i>GHG emissions (Gg CO₂ eq)</i>	<i>% share^a</i>	<i>% change 1990–2016</i>
Energy	35 411.94	70.7	6.4
Industrial processes and product use	776.32	1.6	–73.6
AFOLU	–17 037.76	NA	–1 430.8
Livestock (category 3.A)	4 813.81	9.6	–1.1
Land (category 3.B)	–27 007.70	NA	–79.1
Aggregate sources and non-CO ₂ emissions sources on land (category 3.C)	5 156.13	10.3	–43.3
HWP and other emissions (category 3.D)	NE	NA	NA
Waste	3 915.96	7.8	24.8

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

34. Cuba reported information on its use of global warming potential values consistent with those provided by the IPCC in its Second Assessment Report based on the effects over a 100-year time-horizon of GHGs.

35. For the energy sector, information was clearly reported on GHG emissions, methodological tier levels, sources of AD, EFs, key categories and notation keys used. In 2016, emissions from the energy sector accounted for 71.0 per cent of the Party's total emissions, representing an increase of 6.4 per cent compared with the 1990 level but a decrease of 2.0 per cent compared with the 2014 level (the most recent year prior to 2016 reported in the BUR). CO₂ accounted for 87.5 per cent of total sectoral emissions, while CH₄ accounted for 12.2 per cent and N₂O for 0.3 per cent. The category with the highest emissions was electricity generation (43.3 per cent), followed by manufacturing industries and construction (16.3 per cent), fugitive emissions from fuels (12.1 per cent) and transport (6.2 per cent). Other sectors (mainly residential) accounted for 5.3 per cent of total sectoral emissions. All key categories in the energy sector were estimated using tier 1 methodology.

36. Information on nine categories under manufacturing industries and construction was not reported in Cuba's BUR, but the Party clarified in the BUR (table 2.26) that this was due to barriers such as lack of AD and other key information.

37. For the IPPU sector, information was clearly reported on GHG emissions, methodological tier levels, sources of AD, EFs, key categories and notation keys used. In 2016, emissions from the sector accounted for 1.6 per cent of the Party's total emissions, representing a decrease of 73.6 per cent compared with the 1990 level and a decrease of 8.1 per cent compared with the 2014 level. CO₂ accounted for 93.5 per cent of total sectoral emissions and CH₄ for 6.5 per cent. N₂O was not estimated. The category with the highest emissions was cement production (86.6 per cent), followed by nitric acid production (6.5 per cent), lime production (4.8 per cent) and iron and steel production (2.1 per cent).

38. Information on emissions from ferroalloys, aluminium, magnesium, lead, zinc, glass, petrochemical and carbon black production was not reported in Cuba's BUR. However, the

Party provided clarification in the BUR (table 2.26), citing lack of AD and other barriers to reporting complete information. HFC, PFC and SF₆ emissions were reported as “NE”.

39. For categories 3.A and 3.C under the AFOLU sector from the 2006 IPCC Guidelines, enteric fermentation and manure management (CH₄) and soil and manure management for agricultural soils (N₂O) were identified as key categories and the most relevant emissions sources in the sector.

40. For land category 3.B (HWP category 3.D was reported as “NE”), Cuba reported annual GHG emissions and removals for 1990–2016. Overall, the reported net removals for land category 3.B fluctuated between a minimum of 15,075.88 CO₂ eq in 1990 and a maximum of 27,007.70 CO₂ eq in 2016.

41. Information on emissions and removals for categories 3.B.1.a (forest land remaining forest land) and 3.B.1.a.iv (firewood) was not clearly reported in Cuba’s BUR. CO₂ emissions reported in table 2.7 are not consistent with the information reported in table 2.18 of the BUR. Emissions from firewood are included in the 31,869.51 Gg CO₂ total CO₂ emissions reported (excluding the forestry and other land use sector) for 2016. During the technical analysis, the Party clarified that this inconsistency was not detected when reviewing the data in the reporting table since the value for emissions from firewood (139.50 Gg CO₂) was not subtracted from the total removals (–27,147.20 Gg CO₂).

42. For the waste sector, information was clearly reported on GHG emissions, methodological tier levels, sources of AD, EFs, key categories and notation keys used. In 2016, the waste sector accounted for 7.8 per cent of the Party’s total emissions, representing an increase of 24.8 per cent compared with the 1990 level and an increase of 3.9 per cent compared with the 2014 level. CH₄ accounted for 94.4 per cent of total sectoral emissions, while N₂O accounted for 5.6 per cent. CO₂ emissions for category 4.C were not estimated owing to lack of AD. Uncategorized waste disposal sites (4.A.3) was identified as the most relevant category, with a share of 62.4 per cent of the entire waste sector, followed by domestic wastewater and industrial wastewater.

43. Information on categories 4.A.1, 4.A.2, 4.B and 4.C was not reported in Cuba’s BUR. However, the Party clarified in the BUR (table 2.26) that it faced barriers to gathering the information.

44. The BUR provides an update to all GHG inventories reported in the Party’s previous NCs. The information reported provides an update of the Party’s NC2, which addressed anthropogenic emissions and removals for every other year in 1990–2002. The update was carried out for 1990–2016 using the methodologies contained in the 2006 IPCC Guidelines and the Revised 1996 IPCC Guidelines, thus generating a consistent 27-year time series. The Party reported that it recalculated emissions for all categories and sectors previously reported for 1990–2002. In addition, it included categories that were not reported previously, thus enhancing inventory completeness. The recalculations were due to the transition to the 2006 IPCC Guidelines from the Revised 1996 IPCC Guidelines and, in some cases, changes in the tier methodology used. The Party reported that recalculations were performed using updated data sources and refined methodologies and resulted in the increase of estimated emissions for 1990–2002 by 14 per cent (annual average) excluding CO₂ removals and by less than 1 per cent (annual average) including CO₂ removals. The GHG inventories for 1990–2016 reported in the BUR are consistent.

45. Cuba described in its BUR the institutional framework for the preparation of its 2016 GHG inventory. The Party reported that the Ministry of Science, Technology and Environment is the governmental body responsible for its climate change policy and GHG inventory, which was prepared with the support of the United Nations Development Programme, which assisted Cuba in designing its GHG inventory system. The Party identified improvements in its reporting, such as using the 2006 IPCC Guidelines (except for category 3.B.1.a, for which the Revised 1996 IPCC Guidelines were used), better disaggregating categories, using standard templates for documenting information for all sectors, providing information on recalculations and having more consistent institutional arrangements.

46. Cuba clearly reported that a key category analysis was performed for the level of and trend in emissions. The Party identified improvements in the information reported, such as presentation of the categories that represent 95 per cent of total emissions and the relevant sectors.

47. Cuba clearly reported information on CO₂ fuel combustion using both the sectoral and the reference approach. The information reported indicates that the combustion emissions estimated under the sectoral and reference approach are 31,124.73 and 31,190.12 Gg CO₂ eq, respectively. The difference between the estimates calculated using the two approaches was reported as 0.21 per cent for 2016. The Party identified improvements in its reporting, such as providing corrected data for the consumption of fuels in energy production and using the national energy balance.

48. Information was reported on international aviation, but information on the estimation method used was not reported in Cuba's BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that emissions were estimated by multiplying the AD from national statistics by the default EF from the 2006 IPCC Guidelines. Emissions from marine bunker fuels were reported as "NE", but the Party clarified in its BUR (table 2.26) that this was due to lack of AD.

49. Cuba reported information on the uncertainty assessment (level and trend) of its national GHG inventory. The uncertainty analysis was based on the tier 1 approach and covers all source categories and almost all direct GHGs. The results obtained, as reported in the BUR, reveal that the level uncertainty for emissions is between -62.5 per cent and 115.4 per cent and the trend uncertainty is 90.1 per cent.

50. Information on the selected uncertainty values for AD and EFs and the reasons for their selection was not reported in Cuba's BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that the uncertainty values used for the AD and EFs for the emissions sources are the default values for developing countries from the 2006 IPCC Guidelines. The Party indicated its intention to strengthen the analysis and quantification of uncertainties by, where possible, recruiting more qualified experts to the inventory team.

51. The TTE noted that the transparency of the information reported on GHG inventories could be enhanced by addressing the areas noted in paragraphs 25, 26, 27, 29, 31, 33, 36, 41, 48 and 50 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

52. As indicated in table I.2, Cuba 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.

53. The information reported provides a comprehensive overview of the Party's mitigation actions and their effects. In its BUR, the Party reported information on its national context and framed its national mitigation planning and actions in the context of identifying mitigation actions in multiple sectors while remaining focused on the higher-emitting sectors, namely energy and agriculture. Cuba undertook its first systematic effort to identify mitigation actions as part of the preparation of its intended nationally determined contribution in 2015, which served to mainstream mitigation opportunities and identify priorities under the National Plan for Social and Economic Development 2030 and the Government's specific plan for dealing with climate change, approved in 2017. Cuba presented in its BUR six mitigation actions: four in the energy sector including transport, one in the forestry sector and one in the agriculture sector.

54. The Party reported a summary of its six sectoral mitigation actions in tabular format in accordance with decision 2/CP.17, annex III, paragraph 11. As at 2018 (the end of the reporting period), two of the actions in the energy sector were under way; the action in the forestry sector had been implemented and completed; and the remaining three actions had not yet been initiated. The implemented mitigation action in the forestry sector contributed

estimated emission reductions of 1,618 kt CO₂ eq in 2010–2018, with forestry being the main source of emission reductions among the mitigation actions reported. The ongoing actions in the energy sector contributed to estimated emission reductions of 195.5 kt CO₂ eq in 2014–2018.

55. Consistently with decision 2/CP.17, annex III, paragraph 12(a), Cuba clearly reported the names of mitigation actions or groups of actions, sector coverage, progress indicators and quantitative goals in the BUR (tables 3.2–3.7). Information on gases covered by the implemented mitigation actions was not reported in the BUR. During the technical analysis, Cuba clarified that information on gases was not provided by the sectoral data suppliers for compiling the information at the national level for preparing the BUR.

56. Cuba reported partial information on the objectives and progress of implementation of mitigation actions. Information on progress and underlying steps was not reported for two actions in the transport and waste sectors.

57. The Party included partial information on methodologies, assumptions, and steps taken or envisaged to achieve those actions for most of the mitigation actions. Assumptions were included for the action on increasing the share of biomass in the electricity mix but envisaged steps were not reported for two actions in the transport and agriculture sectors. During the technical analysis, Cuba clarified that such information was not provided by the relevant stakeholders for compiling the information at the national level for preparing the BUR.

58. The three mitigation actions in the energy sector focus mainly on increasing the share of renewable energy sources in the electricity mix and improving energy efficiency. Two of those actions were reported as ongoing, albeit at a limited pace, while the third action (using biomass for generating electricity) is still at the stage of determining organizational aspects and the availability of adequate funding. Results expected were presented for the reported energy efficiency mitigation action for 2014–2030 in terms of MW installed capacity for renewables and number of devices installed, such as residential and industrial solar heating, light-emitting diode lamps, induction cooking systems and solar water pumps.

59. The planned mitigation action in the transport subsector is focused on reducing consumption of fossil fuels by road vehicles. The result expected is a 50 per cent reduction in consumption compared with the 2016 level. Since 2016, initial tests have been performed locally on specific fleets by introducing hybrid and electric vehicles.

60. Regarding the afforestation mitigation action in the forestry sector implemented in 2010–2018, the Party reported information on the objectives of the action and the steps taken to achieve it, but did not provide information on methodologies or assumptions. Results expected were presented in terms of afforested area in ha, including an estimation of absorption of carbon (5.96 t carbon/ha/year).

61. The mitigation action in the agriculture sector, the aim of which is to reduce GHG emissions by improving swine manure management conditions on livestock farms, has been framed as a NAMA seeking support for preparation. Co-benefits reported include improving management of water and wastewater at basin level and reducing odour problems. Results expected were presented in terms of expected annual GHG emission reductions of 538 kt CO₂ eq.

62. Cuba provided information on its involvement in international market mechanisms as a Party to the Kyoto Protocol. Cuba documented four CDM projects approved by its designated national authority in 2012, only two of which were registered under the CDM process. The statistics presented in the BUR include information on the total projects, sectors covered and quantity of annual certified emission reductions issued for Cuba. The Party reported that, owing to the low prices of certified emission reductions in the international market, two projects were withdrawn from the international accreditation process while two were implemented as planned. An estimated 4.7 Mt CO₂ eq avoided as a result of the two CDM projects in 2012–2016 was reported in the BUR.

63. Cuba reported information on its domestic MRV arrangements in accordance with decision 2/CP.17, annex III, paragraph 13. The information reported indicates that Cuba has devised a general approach to an MRV system that will be useful for meeting the

requirements under the ETF. Under this general approach, work has begun on developing an MRV system for mitigation actions, including identifying appropriate institutions and main roles.

64. The TTE noted that the transparency of the information reported on mitigation actions could be enhanced by addressing the areas noted in paragraphs 55 and 57 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, Cuba 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. Cuba 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, Cuba identified difficulties in accessing the most appropriate technologies to address climate change as a constraint. Cuba reported that its financial, technical and capacity-building needs are primarily in the areas of tracking the progress of implementation of its mitigation actions and using the 2006 IPCC Guidelines for preparing its GHG inventory.

67. Information on financial, technical and capacity-building needs was reported but not in a disaggregated manner. The Party clarified in the BUR that the lack of a specific MRV subsystem was the main constraint on reporting such information in a detailed manner.

68. Cuba reported information on financial resources, technology transfer, capacity-building and technical support received in accordance with decision 2/CP.17, annex III, paragraph 15. In its BUR (table 5.3), Cuba reported that it received USD 852,000 from the Global Environment Facility, which included allocation for preparing both its first BUR and its NC3, and USD 273,000 from the Green Climate Fund for a readiness project. The information on support received was not disaggregated between technology and other support. During the technical analysis, the Party clarified that it does not currently have the capacity to report such information. The TTE noted that Cuba intends to improve this by 2025 with the adoption of a fully functional MRV system.

69. Cuba reported information on nationally determined technology needs with regard to the development and transfer of technology in accordance with decision 2/CP.17, annex III, paragraph 16. In its BUR, Cuba reported that the technology needs assessment was nationally determined. An outdated technology needs assessment was the basis for the technology needs reported in the BUR. During the technical analysis, Cuba confirmed that its technology needs assessment must be updated.

70. 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 68–69 above, which could facilitate a better understanding of the information reported on needs and support received.

D. Identification of capacity-building needs

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

- (a) Enhancing national capacity to use tier 2 or 3 methodologies for key categories;
- (b) Enhancing national capacity to obtain AD for estimating categories 3.B.2–3.B.6 and 3.D.1 in the AFOLU sector;
- (c) Enhancing capacity to obtain AD for estimating categories 4.A.1, 4.A.2, 4.B and 4.C in the waste sector;
- (d) Enhancing capacity to obtain AD for estimating CH₄ emissions in the IPPU sector;

- (e) Enhancing capacity to estimate emissions of precursor and other gases, such as sulfur dioxide, using the most recent version of the EMEP/EEA air pollutant emission inventory guidebook;
- (f) Strengthening the analysis and quantification of uncertainties by, where possible, recruiting more qualified experts to the inventory team;
- (g) Enhancing national capacity to implement robust QA/QC procedures using the results of the GHG inventory management system project to improve the quality of the inventory;
- (h) Enhancing national capacity to identify mitigation actions in line with the national, subnational and sectoral priorities within the framework of the Government's specific plan for dealing with climate change;
- (i) Increasing national capacity to monitor and assess the impact of mitigation actions and their mitigation potential to help in identifying, applying and reporting methodologies, associated assumptions and steps envisaged for estimating the impacts of mitigation actions, as well as to interpret the results achieved in specific sectors (e.g. energy, transport, forestry, agriculture and waste), and to formulate mitigation scenarios in line with the reporting provisions from the BUR guidelines;
- (j) Enhancing the capacity of relevant institutions and staff to implement the MRV system for mitigation actions at the national level and in the sectors that were covered in the nationally determined contribution;
- (k) Enhancing national capacity to report on financial, technology and capacity-building needs and support received by developing and implementing a robust MRV subsystem to help gather the necessary information;
- (l) Enhancing national capacity to develop and adopt a methodology for tracking and reporting – separately and on the basis of its MRV system – technology, finance and capacity-building support received;
- (m) Enhancing national capacity to update the assessment of technology needs.

72. The TTE noted that, in addition to those identified during the technical analysis, Cuba reported the following capacity-building needs in its BUR (tables 2.26 and 5.1):

- (a) Strengthening national capacity to prepare the GHG inventory and the national inventory report for the purpose of the BUR:
 - (i) Estimating GHG emissions and removals from land for category 3.B using the 2006 IPCC Guidelines;
 - (ii) Enhancing formal institutional arrangements for obtaining AD and expert judgment, as appropriate;
 - (iii) Enhancing the technical capacity of the teams compiling the inventories for each sector;
 - (iv) Enhancing QA/QC and archiving procedures for the inventory system;
- (b) Strengthening institutional and human capacity to fulfil reporting obligations under the UNFCCC;
- (c) Enhancing national capacity to establish a systematic and continuous approach to raising public awareness on climate change;
- (d) Preparing baselines and scenarios for mitigation purposes by sector and territory, taking into account their interconnection and prioritization for execution;
- (e) Establishing a fully operational MRV system;
- (f) Strengthening national capacity to elaborate BURs and NCs on a continuous basis.

III. Conclusions

73. The TTE conducted a technical analysis of the information reported in the first BUR of Cuba 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; domestic MRV; and other information relevant to the achievement of the objective of the Convention. The TTE concluded that the information analysed is partially transparent.

74. Cuba reported information on the institutional arrangements relevant to the preparation of its BURs. It has taken significant steps to establish institutional arrangements that allow for the sustainable preparation of its BURs, which include making organizational improvements and establishing knowledge-sharing procedures to facilitate sectoral information transfer.

75. In its first BUR, submitted in 2020, Cuba reported information on its national GHG inventory for 1990–2016. This included GHG emissions and removals of CO₂, CH₄ and N₂O for all relevant sources and sinks. The inventory was developed on the basis of the 2006 IPCC Guidelines (except for category 3.B.1.a (forest land remaining forest land), for which the Revised 1996 IPCC Guidelines were used) and included an analysis for individual key categories. The total GHG emissions for 2016 were reported as 50,074.15 Gg CO₂ eq (excluding land and HWP) and 23,066.45 Gg CO₂ eq (including land and HWP). Twenty-five key categories and three main gases were identified, with forest land remaining forest land (3.B.1.a) and electricity generation (1.A.1.a.i) as the main key categories and CO₂ as the primary main gas. Estimates of fluorinated gases and precursor gases were not provided owing to difficulties in obtaining the necessary data, as clarified by the Party during the technical analysis.

76. Cuba reported information on mitigation actions and their effects in tabular format, in line with the national framework established in 2015 for the design and implementation of mitigation measures to meet Cuba's commitments under the Paris Agreement. Cuba reported two ongoing mitigation actions in the energy sector, one completed mitigation action in the forestry sector and three planned mitigation actions in the energy sector, agriculture sector and transport subsector. The mitigation actions focus on increasing the share of renewable energy sources in the electricity mix, improving energy efficiency, reducing consumption of fossil fuels by road vehicles, and improving the swine manure management conditions on livestock farms.

77. The Party reported that the afforestation mitigation action completed in 2018 resulted in a total emission reduction of 1,618.9 kt CO₂ in 2010–2018. It also reported the co-benefits that could result from its NAMA targeted at improving the manure management conditions on livestock farms, including improving management of water and wastewater at basin level and reducing odour problems. Information was reported on the Party's international market mechanisms and planned MRV system for mitigation actions, currently at the design stage.

78. Cuba reported information on key constraints and gaps and related needs, including challenges in accessing technology to address climate change, and on the technical, technology transfer and capacity-building support received. The Party reported that it received financial support of approximately USD 852,000 from the Global Environment Facility for preparing its BUR and NC3, and USD 273,000 from the Green Climate Fund for a readiness project. The Party further reported information on transfer of technology received, but disaggregated data on the financial resources, technology transfer, capacity-building and technical support received were not clearly reported in its BUR.

79. The TTE, in consultation with Cuba, identified the 13 capacity-building needs listed in chapter II.D above 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. Cuba identified the following as priority capacity-building needs:

- (a) Enhancing national capacity to obtain AD for estimating categories 3.B.2–3.B.6 and 3.D.1 in the AFOLU sector;
- (b) Enhancing national capacity to obtain AD for estimating categories 4.A.1, 4.A.2, 4.B and 4.C in the waste sector;
- (c) Enhancing national capacity to estimate emissions of precursors and other gases, such as sulfur dioxide, using the most recent version of the EMEP/EEA air pollutant emission inventory guidebook;
- (d) Strengthening the analysis and quantification of uncertainties by, where possible, recruiting more qualified experts to the inventory team;
- (e) Enhancing national capacity to identify mitigation actions in line with the national, subnational and sectoral priorities within the framework of the Government’s specific plan for dealing with climate change;
- (f) Increasing national capacity to monitor and assess the impact of mitigation actions and their mitigation potential to help in identifying, applying and reporting methodologies, associated assumptions and steps envisaged for estimating impacts of mitigation actions, as well as to interpret the results achieved in specific sectors (e.g. energy, transport, forestry, agriculture and waste), and to formulate mitigation scenarios in line with the reporting provisions from the BUR guidelines;
- (g) Enhancing the capacity of relevant institutions and staff to implement the MRV system for mitigation actions at the national level and in the sectors that were included in the nationally determined contribution;
- (h) Enhancing national capacity to report on financial, technology and capacity-building needs and support received by developing and implementing a robust MRV subsystem to help gather the necessary information.

Annex I

Extent of the information reported by Cuba 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 Cuba

<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	Cuba submitted its first BUR in November 2020; the GHG inventory reported is for 1990–2016.
Decision 2/CP.17, annex III, paragraph 3	Non-Annex I Parties should submit updates of their national GHG inventories according to paragraphs 8–24 of the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties as contained in the annex to decision 17/CP.8.	Yes	
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	Cuba used a combination of the Revised 1996 IPCC Guidelines and 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	The updated AD used to estimate emissions using both the Revised 1996 IPCC Guidelines and the 2006 IPCC Guidelines were not reported.
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. Cuba did not provide the tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF or any other table from the 2006 IPCC Guidelines that would include comparable information.
	(b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines.	No	Comparable information was not reported. Cuba included a table in annex 3 to the BUR that contains part of the information that should be included in the sectoral report tables annexed to the Revised 1996 IPCC Guidelines. Information was reported on direct GHG

<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>
			emissions and removals, but no information was included on GHG precursors.
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.	Yes	Cuba provided a consistent time series (1990–2016) from the first year reported in its NC1 (1990) through the interim years reported in all subsequent NCs.
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 every other year of the time series 1990–2002 reported in Cuba's NC2.
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:		
	(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);	Partly	Comparable information was reported in the table in annex 3 to the BUR on emissions and removals for GHGs not controlled by the Montreal Protocol, but no information was included on GHG precursors.
	(b) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF ₆).	No	Comparable information was not reported. Cuba included a table in annex 3 to the BUR, reporting HFCs, PFCs and SF ₆ as "NE". Table 2 requires emissions to be reported on a gas-by-gas basis for HFCs and PFCs, but the table in annex 3 to the BUR does not contain that information.
Decision 2/CP.17, annex III, paragraph 10	Additional or supporting information, including sector-specific information, may be supplied in a technical annex.	Yes	Cuba provided tables in annexes 1–3 to the BUR containing detailed information on methodologies, methods and sources of information used for all sectors, categories and subcategories.
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.	Yes	Information on procedures and arrangements for collecting and archiving data, as well as efforts to make this a continuous process, including information on the role of the institutions involved, was reported in the BUR (sections 2.1.1–2.1.2).

<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 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:		
	(a) CO ₂ ;	Partly	Cuba reported CO ₂ emissions for some categories for which IPCC methodologies are available as “NE”: 2.A.3, 2.A.4, 2.B.5, 2.C.2–2.C.6, 2.D.1, 2.D.2, 3.B.2–3.B.6, 3.D.1, 4.C.1 and 4.C.2.
	(b) CH ₄ ;	Partly	Cuba reported CH ₄ emissions for some categories for which IPCC methodologies are available as “NE”: 2.C.1, 2.C.2, 3.C.1, 4.B, 4.C.1 and 4.C.2.
	(c) N ₂ O.	Partly	Cuba reported N ₂ O emissions for some categories for which IPCC methodologies are available as “NE”: 2.G.3, 3.C.1, 4.C.1 and 4.C.2.
Decision 17/CP.8, annex, paragraph 15	Non-Annex I Parties are encouraged, as appropriate, to provide information on anthropogenic emissions by sources of:	Yes	Cuba reported all fluorinated gas emissions as “NE” in annex 3 to the BUR.
	(a) HFCs;	Yes	
	(b) PFCs;	Yes	.
	(c) SF ₆ .	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:		
	(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 ₂ 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;	Yes	Emissions from international aviation were reported in annex 3 to the BUR as a memo item.
	(b) Marine bunker fuels.	No	Emissions from marine bunker fuels were reported as “NE” in annex 3 to the BUR.

<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 17/CP.8, annex, paragraph 20	Non-Annex I Parties wishing to report on aggregated GHG emissions and removals expressed in CO ₂ eq should use the global warming potential provided by the IPCC in its Second Assessment Report based on the effects of GHGs over a 100-year time-horizon.	Yes	
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	Cuba used the 2006 IPCC Guidelines. Tier 1 methodology was used for all estimates, except those relating to CO ₂ emissions for categories 2.A.1 and 2.A.2, N ₂ O emissions for category 2.B.2 and CH ₄ emissions for category 3.A.1, for which tier 2 methodology was used.
	(b) Explanation of the sources of EFs;	Yes	Cuba used the 2006 IPCC Guidelines and reported on the sources of EFs in annex 1 to the BUR.
	(c) Explanation of the sources of AD;	Yes	Cuba used the 2006 IPCC Guidelines and reported on the sources of AD in annex 1 to the BUR.
	(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;		
	(e) Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building.	Yes	Cuba provided detailed information on further improvements in the BUR (section 2.6, table 2.26).
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	Yes	Notation keys were used.

<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>
	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.		
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	Information on the underlying assumptions in relation to the uncertainty values considered for both AD and EFs was not provided.
	(c) Methodologies used, if any, for estimating these uncertainties.	Yes	Cuba used the error propagation method.

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 first biennial update report of Cuba

<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 was not reported.
	(b) Information on:		
	(i) Methodologies;	No	
	(ii) Assumptions;	Partly	Assumptions were reported for only one of the six mitigation actions reported in the BUR,

<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>
			namely the mitigation action aimed at including biomass in the electricity mix.
	(c) Information on:		
	(i) Objectives of the action;	Yes	
	(ii) Steps taken or envisaged to achieve that action;	Partly	Description of steps taken for the actions under implementation was included; for two actions (in transport and agriculture) envisaged steps were not reported.
	(d) Information on:		
	(i) Progress of implementation of the mitigation actions;	Yes	
	(ii) Progress of implementation of the underlying steps taken or envisaged;	Partly	Information on progress and underlying steps was not reported for two actions (in transport and waste).
	(iii) Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible;	Partly	For one action (in transport) insufficient information was included; for two actions (in energy and transport) estimates of GHG emission reductions were not provided.
	(e) Information on international market mechanisms.	Yes	
Decision 2/CP.17, annex III, paragraph 13	Parties should provide information on domestic MRV arrangements.	Yes	A description of the MRV system being developed was provided in the BUR (chap. 4).

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 first biennial update report of Cuba

<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.	Partly	Identified needs were reported but not classified into technical, financial or capacity-building needs in the BUR (mostly in tables 5.1, 5.2 and 5.4).
Decision 2/CP.17, annex III, paragraph 15	Non-Annex I Parties should provide:		
	(a) Information on financial resources received, technology transfer and capacity-building received;	Yes	This information was provided in the BUR (table 5.3).
	(b) Information on technical support received from the Global Environment Facility, Parties included in Annex II to the	Yes	This information was provided in the BUR (table 5.3).

<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>
	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.		
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:		
	(a) Nationally determined technology needs;	Yes	
	(b) Technology support received.	Partly	Technology support received was not reported separately from other support received.

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

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B. UNFCCC documents

First BUR of Cuba. Available at <https://unfccc.int/BURs>.

NC1–3 of Cuba. Available at <https://unfccc.int/non-annex-I-NCs>.
