United Nations

Framework Convention on Climate Change

FCCC/SBI/ICA/2019/TASR.1/PNG

Distr.: General
22 April 2020

English only

Technical analysis of the first biennial update report of Papua New Guinea submitted on 17 April 2019

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 Papua New Guinea, conducted by a team of technical experts in accordance with the modalities and procedures contained in the annex to decision 20/CP.19.

GE.20-03678(E)

2003678

Contents

Abbreviations and acronyms

AD	activity data
BUR	biennial update report
CCDA	Climate Change and Development Authority of Papua New Guinea
CDM	clean development mechanism
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
EF	emission factor
GEF	Global Environment Facility
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
ICA	international consultation and analysis
IO	instantaneous oxidation
IPCC	Intergovernmental Panel on Climate Change
IPCC good practice guidance	*Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*
IPCC good practice guidance for LULUCF	*Good Practice Guidance for Land Use, Land-Use Change and Forestry*
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
MRV	measurement, reporting and verification
NC	national communication
NCCDMP	National Climate Compatible Development Management Policy of Papua New Guinea
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
NO_X	nitrogen oxides
NRS	National REDD+ Strategy 2017–2027 of Papua New Guinea
N_2O	nitrous oxide
PFC	perfluorocarbon
POME	palm oil mill effluent
QA/QC	quality assurance/quality control
REDD+	reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks (decision 1/CP.16, para. 70)
Revised 1996 IPCC Guidelines	*Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*
SF_6	sulfur hexafluoride
SO_X	sulfur oxides
TTE	team of technical experts
UNEP	United Nations Environment Programme
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"
2006 IPCC Guidelines	*2006 IPCC Guidelines for National Greenhouse Gas Inventories*

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 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.

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. Decision 14/CP.19, paragraph 7, outlines that developing country Parties seeking to obtain and receive payments for results-based actions can submit relevant information and data through the BUR in the form of a technical annex as per decision 2/CP.17, annex III, paragraph 19. Decision 14/CP.19, paragraph 8, outlines that the submission of the technical annex is voluntary and in the context of results-based payments. As mandated by decision 14/CP.19, paragraphs 10–14, the technical annex submitted by Papua New Guinea has been subject to technical analysis by two LULUCF experts as part of the technical analysis of the Party's BUR.

5. This summary report presents the results of the technical analysis of the first BUR of Papua New Guinea, 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. The technical report capturing the results of the technical analysis of the technical annex voluntarily submitted by Papua New Guinea in the context of results-based payments in accordance with paragraphs 7 and 8 of decision 14/CP.19, referred to in paragraph 4 above, is contained in document FCCC/SBI/ICA/2019/TATR.1/PNG.

B. Process overview

6. In accordance with the mandate referred to in paragraph 2 above, Papua New Guinea submitted its first BUR on 17 April 2019 as a stand-alone update report.

7. During the technical analysis, the Party clarified that a lack of capacity to use the 2006 IPCC Guidelines and a lack of capacity to prepare the BUR resulted in the delay to the submission.

8. The technical analysis of the BUR took place from 2 to 6 September 2019 in Bonn 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: Ahmad Wafiq Aboelnasr (Egypt), Kwame Agyei (Ghana), Rehab Ahmed Hassan (member of the Consultative Group of Experts from Sudan), Nura Al-Otaibi (member of the Consultative Group of Experts from Saudi Arabia), Nicolo Macaluso (Canada), Tahira Munir (Pakistan), Raúl Salas Reyes (Mexico) and Maarten van der Eynden (Norway). Mr. Macaluso and Mr. Salas Reyes were the co-leads. The technical analysis was coordinated by Luca Birigazzi and Alma Jean (secretariat).

9. 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 Papua New Guinea engaged in consultation[1] on the identification of capacity-building needs for the preparation of BURs and participation in the ICA process. Following

[1] The consultation was conducted via teleconferencing.

the technical analysis of Papua New Guinea's first BUR, the TTE prepared and shared a draft summary report with Papua New Guinea on 2 December 2019 for its review and comment. Papua New Guinea, in turn, provided its feedback on the draft summary report on 2 March 2020.

10. The TTE responded to and incorporated Papua New Guinea's comments referred to in paragraph 9 above and finalized the summary report in consultation with the Party on 27 March 2020.

II. Technical analysis of the biennial update report

A. Scope of the technical analysis

11. 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).

12. The remainder of this chapter presents the results of each of the three parts of the technical analysis of Papua New Guinea's BUR outlined in paragraph 11 above.

B. Extent of the information reported

13. The elements of information referred to in paragraph 11(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 the progress made in their implementation; information on domestic MRV; and information on support needed and received.

14. 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 13 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

15. The technical analysis referred to in paragraph 11(b) above aims to increase the transparency of 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. Papua New Guinea reported in its first BUR the following information on its national circumstances: a description of its geography, biodiversity, climate and weather, population, economy, agriculture, forestry, fish resources, energy and transport, as well as information regarding 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, in Article 4, paragraphs 9 and 10, of the Convention. The Party reported that it is highly vulnerable to the impacts of climate change owing to its national circumstances. It is a geomorphologically diverse country in the South-West Pacific Ocean and contains four large provincial islands and over 600 smaller islands expanding over 800,000 km^2 ocean. The total land area of the country is 46.9 million ha, with 5,152 km coastline and 40,000 km^2 coral reefs. Papua New Guinea's location makes it particularly vulnerable to sea level rise and other weather-related manifestations of climate change.

20. In addition, Papua New Guinea provided a summary of relevant information regarding its national circumstances in tabular and graphic format.

21. Papua New Guinea transparently described in its BUR the existing institutional arrangements relevant to the preparation of its NCs and BURs on a continuous basis. CCDA is the designated national authority responsible for implementing the Convention and the Paris Agreement in collaboration with other agencies. It coordinates the research, analysis and development of the national policy and legislative framework for managing climate change within the NCCDMP. It is also responsible for the overall coordination and management of the preparation of the Party's BURs and NCs. The Party reported comprehensive information on the role and responsibilities of CCDA in coordinating such preparation, including provision of the information required, and specific elements of the ICA process. The legal framework that facilitates the sustainable institutional arrangements is clearly reported on in the BUR, and includes Papua New Guinea Vision 2050, the Papua New Guinea Development Strategic Plan 2010–2030, the Climate Change (Management) Act 2015 and the United Nations Paris Agreement (Implementation) Act 2016.

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

22. As indicated in table 1 in annex I, Papua New Guinea 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. Papua New Guinea submitted its first BUR in April 2019 and the GHG inventory reported is for 2000–2015, which is consistent with the requirements for the reporting time frame. During the technical analysis, Papua New Guinea clarified that significant efforts were made to improve the inventory for 2015, which is reported in its BUR, compared with the GHG inventory provided as part of its NC2.

24. GHG emissions and removals for the BUR covering the 2000–2015 inventories were estimated using mainly a tier 1 methodology from the 2006 IPCC Guidelines. Papua New Guinea used the 2006 IPCC Guidelines for estimating emissions and removals for all

categories of the energy, IPPU, agriculture, LULUCF and waste sectors, other than for burning of agricultural residues, for which the Party used the Revised 1996 IPCC Guidelines. For the LULUCF sector, country-specific EFs were used for some categories. The TTE commends the Party for using the 2006 IPCC Guidelines.

25. The sources of AD were the existing lead government agencies for each sector, such as the Department of Agriculture and Livestock, Papua New Guinea Forest Authority, Water PNG, the National Statistical Office and the National Capital District Commission, and two private companies in the field of the distribution of N_2O and lubricants. In addition, AD were obtained from international sources such as the Food and Agriculture Organization of the United Nations.

26. Information on the Party's total GHG emissions by gas for 2015 is outlined in table 1 in Gg CO_2 eq. It shows an increase in emissions (excluding LULUCF) of 80.3 per cent since 2000 (7,718 Gg CO_2 eq). Information on HFCs, PFCs and SF_6 was not reported in the BUR. During the technical analysis, the Party clarified that it had encountered challenges in obtaining a complete set of AD for those gases. Regarding HFCs, it clarified that it was able to obtain supply data but not end-use data. The TTE noted that the Party clarifying these challenges in the BUR could facilitate a better understanding of the information reported.

Table 1
Greenhouse gas emissions and removals by gas for Papua New Guinea for 2015

Gas	*GHG emissions (Gg CO_2 eq) including LULUCF*	*Change (%) 2000–2015*	*GHG emissions (Gg CO_2 eq) excluding LULUCF*	*Change (%) 2000–2015*
CO_2	9 211	149.4	8 061	135.8
CH_4	5 144	35.0	4 750	34.4
N_2O	838	30.9	667	28.0
HFCs	NE	NE	NE	NE
PFCs	NE	NE	NE	NE
SF_6	NE	NE	NE	NE
Total	**15 193**	**207.2**	**13 477**	**80.3**

27. Papua New Guinea applied notation keys in tables where numerical data were not provided. The use of notation keys in some cases was not consistent with the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties. In table 2.5 of the BUR, for GHG emissions in 2015, the notation key "IO" was reported for the category harvested wood products. Notation keys were not reported for HFCs, PFCs or SF_6, for which "0.00" was reported instead. During the technical analysis, the Party clarified that "IO" refers to instantaneous oxidation and that emissions of fluorinated gases were not estimated. The Party informed the TTE that it is planning to include HFCs in its next BUR and may consider including the other fluorinated gases. The TTE noted that the Party including clarification of "IO" and reporting emissions that occur but are not estimated as "NE" rather than "0.00" could facilitate a better understanding of the information reported on the GHG emissions from harvested wood products and HFCs, PFCs and SF_6 reported in table 2.5 of the BUR.

28. Papua New Guinea reported partially comparable information addressing the tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF, as information was provided at an aggregate level, and reported comparable information addressing the sectoral reporting tables annexed to the Revised 1996 IPCC Guidelines.

29. The shares of emissions that different sectors contributed to the total GHG emissions excluding LULUCF as reported by the Party for 2015 are reflected in table 2.

Table 2
Greenhouse gas emissions by sector for Papua New Guinea for 2015

Sector	*GHG emissions (Gg CO_2 eq)*	*Share[a] (%)*	*Change (%) 2000–2015*
Energy	11 806	87.61	88.2
Agriculture	796	5.91	16.7
LULUCF	1 716	–	107.9
IPPU	2	0.01	100.0
Waste	872	6.47	68.3

[a] Share of total without LULUCF.

30. Papua New Guinea reported information on its use of GWP 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.

31. For the energy sector, total emissions were reported to be 11,806 Gg CO_2 eq in 2015. Some categories were reported as "NO" or "NE", but the reason for not estimating the emissions from these sources was not clearly identified. Emissions from transportation were reported as an aggregated total that included emissions from domestic sources (such as road, rail and aviation). During the technical analysis, the Party clarified that it had faced challenges in reporting on transportation disaggregated by mode owing to lack of data. It also clarified that the source of AD for transport was the Asia-Pacific Economic Cooperation energy balance table, as there was no energy balance table for Papua New Guinea. The TTE noted that the Party reporting on transportation disaggregated by mode, including separate memo items for international aviation and international marine bunkers, reporting on the types of fuel used and reporting the appropriate notation keys in the BUR could facilitate a better understanding of the information reported.

32. For the IPPU sector, Papua New Guinea provided two different values for the total emissions from the sector for 2015 in its BUR. In table 2.3, total emissions for the IPPU sector were reported as 2 Gg CO_2 eq, an increase of 100 per cent compared with the 2000 level. In section 2.4.2.1, total emissions for the IPPU sector were reported as 35.29 Gg CO_2 eq. During the technical analysis, the Party clarified that the correct value for total emissions from the IPPU sector for 2015 is 2 Gg CO_2 eq. In its BUR, Papua New Guinea clarified that a major adjustment concerning the categories covered in the IPPU sector was made compared with its NC2. The reported emissions from the IPPU sector currently cover two categories: non-energy products from fuels and fossil fuels (lubricant use) and other product manufacture and use (N_2O for medical use).

33. For the agriculture sector, total emissions for 2015 were reported as 796 Gg CO_2 eq, an increase of 16.72 per cent compared with the 2000 level. Emissions of N_2O from agricultural soils and of CH_4 from enteric fermentation were identified as key categories and were the most significant emissions sources in the sector. Papua New Guinea used EFs from the 2006 IPCC Guidelines. Emissions from liming and urea application were not included in the BUR owing to limited availability of AD.

34. For the LULUCF sector, total emissions for 2015 were reported as 1,716 Gg CO_2 eq. The annual net emissions from the LULUCF sector fluctuated between a minimum of –21,654 Gg CO_2 eq in 2000 and a maximum of 3,898 Gg CO_2 eq in 2013. Emissions from settlements remaining settlements, wetlands and other land were not reported. During the technical analysis, Papua New Guinea explained that those emissions were difficult to estimate owing to lack of data and methodology. The TTE noted that the Party clarifying this information in the BUR could facilitate a better understanding of the information reported.

35. For the waste sector, total emissions for 2015 were reported as 872 Gg CO_2 eq, an increase of 68.43 per cent compared with the 2000 level. CH_4 emissions from wastewater treatment and discharge and from solid waste disposal were the most significant emissions sources in the sector. Information was not reported on waste incineration or open burning of waste.

36. Papua New Guinea reported its national GHG inventory as a chapter of the BUR, containing information that provides an update of the Party's NC2, which addressed anthropogenic emissions and removals for 1994 and 2010. The update was carried out for all years 2000–2015 using the methodologies contained in the 2006 IPCC Guidelines, thus generating a consistent 16-year time series. Summary information tables of the inventory for 1994 were not reported in the BUR. During the technical analysis, the Party clarified that the preparation of the GHG inventories reported in its NC1 and NC2 was carried out on a project basis and not institutionalized. The TTE noted that the Party reporting information for previous submission years in the BUR could facilitate a better understanding of the information reported.

37. Papua New Guinea described in its BUR the institutional framework for the preparation of its 2015 GHG inventory. CCDA is the governmental body responsible for national climate change policy and is responsible for the Party's GHG inventory and BUR, which were prepared with the support of UNEP, which acts as the GEF implementing agency for the project. Among its key functions, CCDA identifies data sources for each sector, collects and compiles AD and EFs for each sector and is responsible for the estimation and reporting of GHG emissions by sources and removals by sinks for the national inventory.

38. Papua New Guinea reported that a key category analysis was performed with and without LULUCF for the level of emissions, and a table containing the results was included in the BUR. However, the Party did not report clearly the methodology used for conducting the key category analysis. During the technical analysis, it clarified that a quantitative key category analysis was carried out in accordance with the 2006 IPCC Guidelines. The TTE noted that the Party reporting on the methodology used for conducting the key category analysis in the BUR could facilitate a better understanding of the information reported.

39. The BUR provides information on QA/QC measures for some sectors. The TTE commends Papua New Guinea for providing information in accordance with the IPCC good practice guidance. During the technical analysis, the Party clarified that it had encountered challenges in conducting QA/QC.

40. Papua New Guinea reported in figure 2.6 of its BUR information on CO_2 fuel combustion using both the sectoral and the reference approach and the differences between the two approaches. The Party reported differences between the estimates calculated using the two approaches of 23 per cent for 2004 and 15 per cent for 2015, which were due to statistical discrepancies in the crude oil and natural gas data, respectively. The Party also reported differences between the estimates calculated using the two approaches ranging from 0 to 7 per cent for the other GHG inventory years.

41. Information was not clearly reported on international aviation and marine bunker fuels. The TTE noted that Papua New Guinea reported emissions from road transportation, civil aviation and navigation for both domestic and international bunkers at an aggregated level.

42. Papua New Guinea did not report information on the uncertainty assessment of its national GHG inventory. During the technical analysis, the Party clarified that it had faced challenges in conducting the uncertainty assessment, and capacity-building for conducting uncertainty assessment was identified as one of the Party's needs in its BUR.

43. The TTE noted that the transparency of the information reported on GHG inventories could be further enhanced by addressing the areas noted in paragraphs 26–28, 31, 32, 34–37, 39, 42 and 43 above.

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

44. As indicated in table 2 in annex I, Papua New Guinea 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.

45. The information reported provides a clear overview of the Party's mitigation actions and their effects. In its BUR, the Party clearly outlined information on its international context and domestic policies, both national and sectoral. Papua New Guinea frames its national mitigation planning and actions in the context of the two long-term policies

represented in Papua New Guinea Vision 2050 – the Papua New Guinea Development Strategic Plan 2010–2030 and the National Strategy for Responsible Sustainable Development for Papua New Guinea – in addition to short-term policies presented in the NCCDMP, which was endorsed in 2014. Regarding the long-term policies, Papua New Guinea reported that environmental sustainability and climate change was one of the seven pillars of the country's Vision 2050, the aim of which is to shift the country's growth from the current emission-intensive trend dominated by the mining and energy sectors towards agriculture, forestry, fisheries, ecotourism and manufacturing by 2050. Three mitigation policies for achieving that aim (namely, achieving carbon neutrality by 2050, abating LULUCF emissions, and promoting green economic growth through low GHG emission infrastructure and technology) are outlined in the NCCDMP.

46. Regarding its short-term policies, Papua New Guinea reported that the Climate Change (Management) Act 2015 was passed to provide continuity for the NCCDMP and set the country on a path to a low-carbon economy by providing an overarching legal framework for regulating climate change. Following the ratification of the Paris Agreement by the Party, the United Nations Paris Agreement (Implementation) Act was passed by its Parliament in 2016, which facilitated implementation of the country's first nationally determined contribution (submitted in March 2016). The main mitigation action reported therein was shifting electricity generation towards renewable energy sources, in addition to other actions such as improving energy efficiency, reducing emissions from the oil and gas sector and implementing REDD+ activities.

47. Papua New Guinea reported 17 mitigation actions or action areas in its BUR: two actions in the agriculture sector, six actions and two action areas in the energy sector, one action in the oil and gas sector, three actions in the transport sector, two actions in the IPPU sector and one action area in the waste sector. A summary of some of its mitigation actions was reported in tabular format (table 3.1 of the BUR) in accordance with decision 2/CP.17, annex III, paragraph 11. The Party also reported information on individual actions and groups of actions in the energy, transport, IPPU, agriculture, LULUCF and waste sectors in textual format in the BUR. During the technical analysis, Papua New Guinea clarified that the information reported in textual format was for sectoral mitigation policies and strategies, while the information reported in tabular format was for mitigation projects. The Party indicated that it had faced challenges in reporting the required information for the policies and strategies in tabular format. The TTE noted that the Party clarifying the challenges faced in reporting in tabular format in the BUR could facilitate a better understanding of the information reported.

48. Consistently with decision 2/CP.17, annex III, paragraph 12(a), Papua New Guinea reported the names of mitigation actions. However, information on coverage (sector and gases) and progress indicators was provided only for the mitigation actions reported in table 3.1 of the BUR. A clear description of most of the mitigation actions was reported in the BUR. The Party reported quantitative goals for the renewable energy plan and for the project on renewable energy generation from biomass listed in table 3.1 of the BUR, but information on quantitative goals for most of the other reported actions was not included. For the LULUCF and agriculture sectors, it was not clearly reported whether the NRS or the NCCDMP provides a description of and quantitative goals for each of the reported action areas.

49. During the technical analysis, Papua New Guinea clarified that it had faced challenges in reporting the quantitative goals for the actions in the LULUCF, agriculture and transport sectors since they were not captured in the relevant national policies and strategies. The Party also clarified that it had faced challenges in reporting the quantitative goals for the other actions related to energy efficiency, oil and gas, IPPU and waste, owing to either inactive institutional arrangements between CCDA as the reporting agency and the implementing entities or lack of technical capacity. During the technical analysis, Papua New Guinea further clarified that it had reported progress indicators only for the actions that had been implemented and for those for which there was an active institutional arrangement with the implementing entity. The Party provided information on the GHGs covered and clarified that it planned to submit detailed information thereon in its next BUR. The TTE noted that the Party clarifying the challenges faced in reporting information on quantitative goals and

progress indicators in the BUR could facilitate a better understanding of the information reported.

50. Papua New Guinea reported the objectives of the mitigation actions in all sectors, but details on the methodologies used for estimating the results, underlying assumptions, steps envisaged for implementation and results expected from the implementation of these actions in the LULUCF, agriculture, transport, IPPU and waste sectors were not provided in the BUR. For the energy sector, information on the methodology for estimating the results achieved was provided for the mitigation actions reported in table 3.1 of the BUR but not for those reported in chapter 3, and information on the steps taken or envisaged to implement them, on progress of implementation and on the results achieved or anticipated from the implementation of most of these mitigation actions was not reported. During the technical analysis, the Party clarified that, given that the mitigation actions reported in textual format are mainly policies and strategies, it faced challenges in reporting on the associated methodologies and assumptions, as well as on the steps envisaged to implement them and their anticipated results, owing to inactive institutional arrangements between the coordinating agency (CCDA) and the private sector implementing entities. The Party reported its plan to restore and strengthen these institutional arrangements. Papua New Guinea also reported that the amount of emissions being reduced or expected to be reduced had not been quantified. The TTE noted that the Party clarifying the challenges faced in reporting information on mitigation actions in the BUR could facilitate a better understanding of the information reported.

51. The mitigation actions in the energy sector relate mainly to promoting renewable energy generation (from geothermal, biomass, waste, wind, solar, hydro and ocean sources). In addition, Papua New Guinea is planning to implement a mitigation action with the aim of facilitating energy efficiency (including through minimum energy performance standards and labelling for equipment and reducing emissions from the oil and gas sector).

52. The mitigation actions for the LULUCF sector, which are set out in the NRS, are mainly in the areas of strengthening land-use and development planning at the national and subnational level; strengthening environmental management, protection and enforcement; and enhancing economic productivity and sustainable livelihoods.

53. For the agriculture sector, the reported mitigation actions are aimed at improving agricultural practices and protecting agricultural land from urban and suburban encroachment. Papua New Guinea reported that these actions had yet to be implemented.

54. The mitigation actions in the transport sector are included in the NCCDMP and the National Transport Strategy and relate mainly to promoting clean fuel technologies and standards by establishing low-carbon fuel standards, regulating GHG emissions from vehicles and providing economic incentives for fuel-efficient vehicles. Papua New Guinea reported that these actions had yet to be implemented.

55. For the IPPU sector, the mitigation actions relate mainly to developing eco-industrial parks and phasing out HFCs by 2050, as the country has signed the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer. The progress of implementation of the mitigation action for developing eco-industrial parks was not clearly reported in the BUR. During the technical analysis, Papua New Guinea clarified that the action had not yet been implemented. The TTE noted that the Party reporting information on the progress of implementation of the mitigation actions in the IPPU sector in the BUR could facilitate a better understanding of the information reported.

56. For the waste sector, the mitigation actions are mainly in domestic solid waste management, including rehabilitating open-pit dumps, improving the waste collection system and developing a solid waste management master plan. Papua New Guinea reported that one of its waste mitigation measures had been implemented in Port Moresby and the same approach is planned for implementing the measure in other urban centres.

57. Papua New Guinea reported that it will be participating voluntarily in the Carbon Offsetting and Reduction Scheme for International Aviation, but did not provide information on its involvement in international market mechanisms as a Party to the Kyoto Protocol. The Party did not clearly report whether it plans to participate in international market mechanisms

in the future. During the technical analysis, Papua New Guinea clarified that the first three mitigation actions (all related to generating renewable energy) in table 3.1 of the BUR (geothermal power project, Kumbango POME methane capture project, and Mosa POME methane capture project) are CDM projects. However, the geothermal power project is no longer receiving certified emission reductions, and there is uncertainty as to whether the two methane capture projects are receiving them. During the technical analysis, the Party clarified that it faced challenges in reporting information on the CDM projects owing to inactive institutional arrangements between the coordinating agency (CCDA) and the implementing entities. It also clarified that it plans to participate in international market mechanisms under REDD+ and probably also in other sectors. The TTE noted that the Party including clear information on its CDM projects and plans to participate in international market mechanisms in the BUR could facilitate a better understanding of the information reported.

58. Papua New Guinea reported information on its domestic MRV arrangements in accordance with decision 2/CP.17, annex III, paragraph 13. The information reported indicates that Papua New Guinea has in place a domestic MRV system for REDD+. The Party reported that its MRV system for REDD+ was developed under its Climate Change Development Strategy in three phases: readiness, implementation (supported by transitional funding) and payments (for verified performance). An institutional framework, with responsibilities defined for the nine national institutions involved, has been established for the MRV system. The system has three pillars: a satellite land monitoring system, a multipurpose national forest inventory for assessing carbon stocks and carbon stock changes, and a national GHG inventory. Papua New Guinea included in the BUR a description of the methodologies, monitoring protocols, approach and mechanisms for conducting domestic REDD+ verification. The TTE commends the Party for its efforts to include detailed information on the domestic MRV system for REDD+ in its BUR. Papua New Guinea reported that the MRV system will be expanded in the future to cover the mitigation actions under all of its national and sectoral policies and strategies. However, the timeline and steps envisaged for this expansion were not clearly reported in the BUR. During the technical analysis, Papua New Guinea clarified that it plans to work on providing this information as part of preparing its second BUR.

59. The TTE noted that the transparency of the information reported on mitigation actions and their effects could be further enhanced by addressing the areas noted in paragraphs 47, 49, 50, 55 and 57 above.

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

60. As indicated in table 3 in annex I, Papua New Guinea 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.

61. Papua New Guinea 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, Papua New Guinea identified data sensitivity and confidentiality, limited budget for carrying out climate change activities, the geographical features of the country and ineffective institutional arrangements as constraints. The key gaps relate to data (i.e. the unavailability of data from some data sources, as well as the inaccuracy and inconsistency of the data that are available) and the absence of an established monitoring system for climate change activities. During the technical analysis, Papua New Guinea clarified that the constraints, gaps and capacity-building needs outlined in its BUR generally relate to the GHG inventory, mitigation and adaptation, and that they hinder the preparation of feasible and achievable policies and measures. These constraints and gaps need to be addressed before policy issues can be addressed. The Party explained that it also faces constraints and gaps in relation to education and awareness-raising. Moreover, it lacks understanding of how to capture all of these issues in the BUR and of the requirements of the UNFCCC reporting guidelines on BURs. The Party clarified that, owing to some confusion between technical and technology needs, specific technical needs were not reported in the BUR. The TTE noted that the Party providing information on the additional constraints, gaps

and needs explained during the technical analysis in the BUR could facilitate a better understanding of the information reported.

62. Papua New Guinea 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, the Party reported that it received financial support for adaptation, REDD+ and mitigation, and MRV. The Party also reported that it received financial support from various governments and organizations (e.g. Australia, European Union, Germany, Japan, Japan International Cooperation Agency, United Nations and United States Agency for International Development). The Party further reported that it received USD 832,000 from the GEF, which included an allocation for both its first BUR and its NC3. From the GEF it also received USD 210,000 for the preparation of its intended nationally determined contribution and USD 3,140,640 to facilitate renewable energy and energy efficiency applications for achieving GHG emission reductions. It was not clear to the TTE whether the Party received other financial support. During the technical analysis, Papua New Guinea clarified that financial support was received from the GEF and that these funds are managed by UNEP in accordance with the workplan agreed by the Party and UNEP, while CCDA (the national designated entity) implements the activities. The Party added that financial support was also received from the Food and Agriculture Organization of the United Nations, mainly for GHG inventory preparation for the agriculture, forestry and other land-use sector.

63. During the technical analysis, Papua New Guinea clarified that it faced challenges in estimating its financial needs owing to lack of capacity (knowledge). The Party explained that it has high-priority issues that need to be immediately addressed with technical and financial support; however, it did not identify the high-priority issues in the BUR. The TTE noted that the Party identifying and prioritizing its financial needs in the BUR could facilitate a better understanding of the information reported.

64. Papua New Guinea did not report information on nationally determined technology needs and technology support received with regard to the development and transfer of technology in accordance with decision 2/CP.17, annex III, paragraph 16. During the technical analysis, Papua New Guinea clarified that it faced challenges in reporting this information; namely, that it was uncertain about what information to report. The TTE noted that the Party clarifying the challenges it faced in reporting information on technology transfer in the BUR could facilitate a better understanding of the information reported.

65. 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 61, 63 and 64 above.

5. Any other information

66. Papua New Guinea provided an update on its participation in the REDD+ safeguards and safeguards information system. The Party established a multi-stakeholder technical working committee on social and environmental safeguards to serve as the primary platform for engaging stakeholders in its country approach to safeguards. It reported in its BUR that it will undertake an analysis of the benefits and risks in relation to the REDD+ (Cancun) safeguards on the basis of the elaboration of specific policies and measures that will be identified through the development of its REDD+ finance and investment plan. The Party has plans, through its country approach, to work towards meeting safeguard requirements for all applicable REDD+ financing, such as results-based payments under the Green Climate Fund.

D. Identification of capacity-building needs

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

(a) For GHG inventory preparation, build or enhance national capacity to:

(i) Use the 2006 IPCC Guidelines, with a focus on data collection and archiving and using notation keys; use the IPCC inventory software; understand and use the

UNFCCC reporting guidelines on BURs; use IPCC methodologies to conduct QA/QC procedures and uncertainty assessment; and use the methodology for calculating emissions from settlements remaining settlements;

(ii) Estimate emissions of NO_X, CO, NMVOCs and SO_X, and collect and compile associated AD;

(iii) Disaggregate the AD for the transport sector by the different subcategories, disaggregate the reporting on domestic and international bunkers, and report emissions by fuel type;

(b) For mitigation actions and their effects, enhance national capacity to:

(i) Report mitigation actions in the BUR in tabular format, with a focus on reporting policies and strategies;

(ii) Understand and apply the provisions in the UNFCCC reporting guidelines on BURs, particularly those in paragraph 12(a–d), including reporting on quantitative goals, progress indicators, GHGs covered, steps taken and envisaged, and progress of implementation for the mitigation actions in all sectors, as well as for policies and strategies;

(iii) Report on methodologies and assumptions used for mitigation actions, including policies and strategies, with a focus on the agriculture sector;

(iv) Develop methods for quantifying the potential for emission limitation or reduction before measures are implemented (ex ante) to facilitate the monitoring of progress and the assessment of their results (ex post), and methods for identifying the co-benefits of programmes and projects;

(v) Develop mitigation actions and assess them (by stakeholders in the agriculture, energy, transport and IPPU sectors);

(vi) Expand the expert and knowledge base for conducting mitigation analysis in all sectors;

(vii) Design monitoring plans for mitigation actions in all sectors;

(viii) Implement energy efficiency measures (by national stakeholders);

(ix) Develop a baseline study of energy efficiency potential, followed by the development of potential feasibility studies and action plans;

(x) Establish a collaborative framework, involving the institutions (including the private sector) implementing mitigation-related programmes and projects, for facilitating access to information on progress;

(xi) Link national REDD+ strategy activities with the mitigation actions reported in the REDD+ technical annex to the BUR;

(xii) Build the institutional capacity of the designated national authority to document and report actual and planned participation in international market mechanisms such as the CDM and other voluntary market mechanisms;

(xiii) Build on the domestic MRV system for REDD+ and integrate a robust MRV system for mitigation actions in other sectors, as well as an MRV system for support needed and received;

(c) For reporting constraints and gaps, and related technology, financial, technical and capacity-building needs, including describing support needed and received, enhance national capacity to:

(i) Correctly interpret the provisions in the UNFCCC reporting guidelines on BURs on needs and support received;

(ii) Report information on education and awareness-raising needs;

(iii) Identify and prioritize financial and technical capacity-building needs;

(iv) Conduct a technology needs assessment.

68. The TTE noted that, in addition to those identified during the technical analysis, Papua New Guinea reported several capacity-building needs in table 5.1 of its BUR, covering the following areas:

(a) GHG inventory preparation, including improving knowledge and skills related to the 2006 IPCC Guidelines, data archiving and management, conducting sector-specific training, the software used for inventory preparation, initiatives under technology transfer, and uncertainty analysis;

(b) Mitigation actions, including improving knowledge and skills in relation to analysis of actions, initiatives under technology transfer, and QA/QC procedures;

(c) Climate change adaptation, including improving knowledge and skills in relation to vulnerability assessment, climate-induced hazard modelling, and monitoring and evaluation.

III. Conclusions

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

70. Papua New Guinea reported information on the institutional arrangements relevant to the preparation of its BURs. The description covers key aspects of the institutional arrangements, such as CCDA (the designated national authority). The Party reported on the domestic MRV system in place for REDD+ and its proposed overall domestic MRV system. It also reported that it has taken significant steps to create institutional arrangements that allow for the sustainable preparation of its BURs, including organizational improvements and knowledge-sharing procedures to facilitate sectoral information transfer.

71. In its first BUR, submitted in 2019, Papua New Guinea reported information on its national GHG inventory for 2000–2015. This included GHG emissions and removals of CO_2, CH_4 and N_2O for most relevant sources and sinks. Estimates of the precursor gases and fluorinated gases were not provided owing to difficulties in obtaining the necessary data and other reasons, as clarified by the Party during the technical analysis. Notation keys were not always clearly reported. The inventory was developed on the basis of the 2006 IPCC Guidelines and Revised 1996 IPCC Guidelines. The total GHG emissions for 2015 were reported as 13,477 CO_2 eq (excluding LULUCF) and 15,193 CO_2 eq (including LULUCF). Thirteen key categories without LULUCF were identified (twelve including LULUCF), with CO_2 and energy industries identified as the main gas and key category, respectively.

72. Papua New Guinea reported information on mitigation actions and their effects, including both its long-term policies (e.g. Vision 2050, the Development Strategic Plan 2010–2030 and the National Strategy for Responsible Sustainable Development) and its short-term policies (e.g. the NCCDMP). The Party reported actions that are planned, ongoing or completed within several sectors, including LULUCF, waste, energy, IPPU, transport and agriculture. The key mitigation actions are mainly in the form of policies and strategies, including the NRS, improving agricultural practices, protecting agricultural land from urban and suburban encroachment, and a renewable energy plan for electricity generation. The country's vision is to achieve carbon neutrality. Mitigation of LULUCF emissions is one of the main actions highlighted in the NCCDMP and the NRS. Papua New Guinea has in place

a domestic MRV system for REDD+, and it plans to expand this system to cover the mitigation actions that are outlined in all of the national and sectoral policies and strategies.

73. Papua New Guinea reported information on key constraints, gaps and related needs. During the technical analysis, the Party provided additional information on key challenges and needs, such as designing and implementing a systematic methodology for identifying constraints, gaps and needs and translating the identified needs into financial, technical, technological and capacity-building needs. Information on support received and needed was reported.

74. The TTE, in consultation with Papua New Guinea, identified the 21 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. The Party prioritized all of those capacity-building needs.

Annex I

Extent of the information reported by Papua New Guinea in its first biennial update report

Table 1
Identification of the extent to which the elements of information on greenhouse gases are included in the first biennial update report of Papua New Guinea

Decision	*Provision of the reporting guidelines*	*Yes/partly/no/NA*	*Comments on the extent of the information provided*
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	Papua New Guinea submitted its first BUR in April 2019; the GHG inventories reported are for 2000–2015.
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	The Party 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.	Yes	
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;	Partly	The Party's first BUR includes a summary table containing subcategory totals only.
	(b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines.	Yes	Comparable information was reported.
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 time series reported in the BUR covers 2000–2015 but does not include 1994, which was reported in the Party's NC1.
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 reported for 2000–2015 (in the NC2, emissions for 2000 were reported); however, such information was not reported for 1994–2000 (in the NC1, emissions for 1994 were reported).
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	*Provision of the reporting guidelines*	*Yes/partly/no/NA*	*Comments on the extent of the information provided*
	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);	Yes	Comparable information was reported in table 2.4 of the BUR.
	(b) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF_6).	No	
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 REDD+ technical annex to its first BUR.
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 data collection procedures was reported but not on the arrangements for archiving data.
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;	Yes	
	(b) CH_4;	Yes	
	(c) N_2O.	Yes	
Decision 17/CP.8, annex, paragraph 15	Non-Annex I Parties are encouraged, as appropriate, to provide information on anthropogenic emissions by sources of:		
	(a) HFCs;	No	
	(b) PFCs;	No	
	(c) SF_6.	No	
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) CO;	No	
	(b) NO_X;	No	
	(c) NMVOCs.	No	
Decision 17/CP.8, annex, paragraph 17	Other gases not controlled by the Montreal Protocol, such as SO_X, and included in the Revised 1996 IPCC Guidelines may be included at the discretion of Parties.	No	The Party did not report on other gases, such as SO_X.
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	*Provision of the reporting guidelines*	*Yes/partly/no/NA*	*Comments on the extent of the information provided*
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;	Partly	Estimates of emissions from international aviation were reported as an aggregate value owing to lack of data.
	(b) Marine bunker fuels.	Partly	Estimates of emissions from marine bunkers were reported as an aggregate value.
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 GWP provided by the IPCC in its Second Assessment Report based on the effects of GHGs over a 100-year time-horizon.	Yes	The Party used the GWP provided in the IPCC Second Assessment Report.
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;	Yes	
	(d) If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe:	NA	
	(i) Source and/or sink categories;		
	(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	
Decision 17/CP.8, annex, paragraph 22	Each non-Annex I Party is encouraged to use tables 1 and 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.	Partly	Notation keys were used. For certain categories, the Party reported "0" instead of the appropriate notation key.

Decision	*Provision of the reporting guidelines*	*Yes/partly/no/NA*	*Comments on the extent of the information provided*
	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;	No	
	(b) Underlying assumptions;	No	
	(c) Methodologies used, if any, for estimating these uncertainties.	No	

Note: The parts of the UNFCCC reporting guidelines on BURs on reporting information on GHG emissions by sources and removals by sinks in BURs are contained in 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 2
Identification of the extent to which the elements of information on mitigation actions are included in the first biennial update report of Papua New Guinea

Decision	*Provision of the reporting guidelines*	*Yes/partly /no*	*Comments on the extent of the information provided*
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 quantitative goals and progress indicators for most of the mitigation actions reported in textual format for all sectors was not reported. For the mitigation actions reported in textual format, the GHGs covered were not reported.
	(b) Information on:		
	(i) Methodologies;	Partly	
	(ii) Assumptions;	Partly	Information on methodologies and assumptions was provided for some of the mitigation actions reported in tabular format, while it was not provided for any of the actions reported in textual format.
	(c) Information on:		
	(i) Objectives of the action;	Yes	

Decision	*Provision of the reporting guidelines*	*Yes/partly /no*	*Comments on the extent of the information provided*
	(ii) Steps taken or envisaged to achieve that action;	No	Information on steps taken or envisaged to implement the mitigation actions was not reported.
	(d) Information on:		
	(i) Progress of implementation of the mitigation actions;	Partly	The status of implementation of most of the mitigation actions was not reported.
	(ii) Progress of implementation of the underlying steps taken or envisaged;	No	
	(iii) Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible;	Partly	Information on results achieved was not reported for most of the mitigation actions.
	(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 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 Papua New Guinea

Decision	*Provision of the reporting requirements*	*Yes/partly/no*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex III, paragraph 14	Non-Annex I Parties should provide updated information on:		
	(a) Constraints and gaps;	Yes	Papua New Guinea included in its BUR a table listing constraints, gaps and capacity-building needs in relation to the GHG inventory, mitigation and adaptation.
	(b) Related financial, technical and capacity-building needs.	Yes	
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	
	(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.	Yes	
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;	No	
	(b) Technology support received.	Yes	

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

Documents and information used during the technical analysis

Reference documents

First BUR of Papua New Guinea. Available at http://unfccc.int/8722.php.

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.

IPCC. 2000. *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*. J Penman, D Kruger, I Galbally, et al. (eds.). Hayama, Japan: IPCC/Organisation for Economic Co-operation and Development/International Energy Agency/Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/gp/english/.

IPCC. 2003. *Good Practice Guidance for Land Use, Land-Use Change and Forestry*. J Penman, M Gytarsky, T Hiraishi, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html.

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

NC1 and NC2 of Papua New Guinea. Available at http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php.