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## **Technical analysis of the first biennial update report of Vanuatu submitted on 16 December 2021**

**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 Vanuatu, 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
Annex II Party	Party included in Annex II to the Convention
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BUR	biennial update report
CBIT	Capacity-building Initiative for Transparency
CH <sub>4</sub>	methane
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> eq	carbon dioxide equivalent
DTU	Technical University of Denmark
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
F-gas	fluorinated gas
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
HWP	harvested wood products
ICA	international consultation and analysis
IPCC	Intergovernmental Panel on Climate Change
IPCC good practice guidance	<i>Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories</i>
IPCC good practice guidance for LULUCF	<i>Good Practice Guidance for Land Use, Land-Use Change and Forestry</i>
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
MRV	measurement, reporting and verification
N <sub>2</sub> O	nitrous oxide
NA	not applicable
NC	national communication
NDC	nationally determined contribution
NE	not estimated
NERM	National Energy Road Map
NMVO	non-methane volatile organic compound
NO	not occurring
non-Annex I Party	Party not included in Annex I to the Convention
NO <sub>x</sub>	nitrogen oxides
PFC	perfluorocarbon
QA/QC	quality assurance/quality control
REDD+	reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management

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	of forests; and enhancement of forest carbon stocks (decision 1/CP.16, para. 70)
Revised 1996 IPCC Guidelines	<i>Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories</i>
SF <sub>6</sub>	sulfur hexafluoride
TNA	technology needs assessment
TTE	team of technical experts
UNDP	United Nations Development Programme
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”
WAM	‘with additional measures’
WEM	‘with measures’
WOM	‘without measures’

## **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 Vanuatu, 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, Vanuatu submitted its first BUR on 16 December 2021 as a stand-alone update report.
6. During the technical analysis, the Party clarified that it faced several challenges in submitting its first BUR, relating to, inter alia, capacity constraints at the government level, data-collection restrictions owing to non-standardized data-collection processes and difficult national circumstances resulting in the resources allocated to the BUR being diverted elsewhere.
7. The technical analysis of Vanuatu's BUR was conducted from 30 January to 3 February 2023 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: Larissa Maria Felip Spalding (Paraguay), Rana Humatova (Azerbaijan), Said Kaddour (Algeria), Flora da Silva Ramos Vieira Martins (Brazil), Benoit Pierre Marie Mayer (France), Liz Silva (Philippines), Anand Sookun (Mauritius) and Verica Taseska Gjorgievska (North Macedonia). Rana Humatova and Benoit Pierre Marie Mayer were the co-leads. The technical analysis was coordinated by Soheli Pasha and Mirana Andriarisoa (secretariat).
8. During the technical analysis, in addition to the written exchange, in the virtual team room, to provide technical clarifications on the information reported in the BUR, the TTE and Vanuatu engaged in consultation<sup>1</sup> on the identification of capacity-building needs for the preparation of BURs and participation in the ICA process. Following the technical analysis of Vanuatu's first BUR, the TTE prepared and shared a draft summary report with Vanuatu on 6 July 2023 for its review and comment. Vanuatu, in turn, provided its feedback on the draft summary report on 6 September 2023.
9. The TTE finalized the summary report in consultation with the Party on 6 September 2023.

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<sup>1</sup> 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 Vanuatu's BUR outlined in paragraph 10 above.

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

12. The elements of information referred to in paragraph 10(a) above include the national GHG inventory report; information on mitigation actions, including a description of such actions, an analysis of their impacts and the associated methodologies and assumptions, and information on progress in their implementation; information on domestic MRV; and information on support needed and received.

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

### **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. Vanuatu reported in its first BUR information on its national circumstances, including a description of national and local development priorities, objectives and circumstances, including features of its geography, climate, environment, ecosystems, population, economy and education system, as well as information on stakeholder participation in the preparation of national climate reports and the contribution of women to politics, economy and decision-making in public and private entities.

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

20. Vanuatu 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; the involvement and roles of other institutions and experts, including public and private sector stakeholders, local and international development partners, and representatives of non-governmental organizations and public groups; mechanisms for information and data exchange and collection, identification of data gaps and assessment of uncertainties; QA/QC procedures; and provisions for preparing, reviewing and approving the GHG inventory. Specifically, the information reported covered the role of the Department of Climate Change, established in 2018, which is responsible for overseeing and implementing climate change activities, monitoring climate finance flow and undertaking communications and awareness-raising activities in relation to climate change. The Department plays a key role in the coordination of policymaking and reporting activities by ensuring that national policies are aligned with the country's international obligations and by monitoring the implementation of national legislation, policies, programmes and information related to climate change.

21. Information on how the developed MRV system would ensure the continuity of preparation of NCs and BURs was not clearly reported in Vanuatu's BUR. During the technical analysis, the Party clarified that once the Department of Climate Change has formalized the data-collection process, its planned MRV system for the GHG inventory will define data-collection and data-transfer procedures, as well as the roles and responsibilities of the different stakeholders involved in preparing the GHG inventory, which will ensure continuity in the preparation of BURs.

22. The TTE noted that the transparency of the information reported on institutional arrangements could be enhanced by addressing the area noted in paragraph 21 above, which could facilitate a better understanding of the information reported on institutional arrangements.

23. Vanuatu reported in its first BUR information on its domestic MRV arrangements. The MRV arrangements are designed at the national level and cover five main areas: the GHG inventory system, mitigation actions, adaptation actions, climate finance flows and sustainable development goals. The arrangements are newly established and will build on the existing systems, processes and infrastructure, rendering them cost-effective. The MRV system for the GHG inventory system is not yet operational, while the MRV of the other areas is carried out with the assistance of thematic working groups.

24. Vanuatu reported in its BUR (section 2.7) information on its areas for improvement for future BURs and its current initiatives for enhancing its institutional arrangements for compliance with requirements under the ETF. The initiatives relate to developing procedural arrangements and an appropriate institutional framework, including MRV systems, to ensure transparent reporting under the Convention and the Paris Agreement and enhance the capacity of national experts. The TTE commends the Party for the clear and comprehensive reporting on its proactive approach to preparing for ETF implementation.

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

25. As indicated in table I.1, Vanuatu reported information on its GHG inventory in its BUR partially in accordance with paragraphs 3–10 of the UNFCCC reporting guidelines on BURs and paragraphs 8–24 of the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties, contained in the annex to decision 17/CP.8.

26. Vanuatu submitted its first BUR in 2021 and the GHG inventory reported is for 2016–2017. The GHG inventory is consistent with the requirements for the reporting time frame.

27. GHG emissions and removals for the BUR covering the 2016–2017 inventory were estimated using tier 1 methodology from the 2006 IPCC Guidelines for all reported categories.

28. Information on AD and EFs used and their sources was reported in the BUR for livestock, solid waste management and wastewater treatment and disposal only.

29. Information on AD and EFs for other categories was not reported in the Party's BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party explained that it had difficulties in collecting the necessary data owing to an absence of data-collection standards and procedures for private and public entities.

30. Information on the Party's total GHG emissions by gas for 2017 is outlined in table 1 in Gg CO<sub>2</sub> eq. It shows an increase in emissions of 5.9 per cent without land and HWP (category 3.B and, if reported, 3.D) since 2010 (566.82 Gg CO<sub>2</sub> eq).

Table 1  
**Greenhouse gas emissions by gas of Vanuatu for 2017**

<i>Gas</i>	<i>GHG emissions (Gg CO<sub>2</sub> eq) including land and HWP<sup>a</sup></i>		<i>GHG emissions (Gg CO<sub>2</sub> eq) excluding land and HWP<sup>a</sup></i>	
		<i>% change 2010–2017</i>		<i>% change 2010–2017</i>
CO <sub>2</sub>	NE	NA	159.67	34.6
CH <sub>4</sub>	NE	NA	378.34	–1.9
N <sub>2</sub> O	NE	NA	62.28	–0.5
HFCs	NE	NA	NE	NE
PFCs	NE	NA	NE	NE
SF <sub>6</sub>	NE	NA	NE	NE
Other	NE	NA	NE	NE
<b>Total</b>	<b>NA</b>	<b>NA</b>	<b>600.28</b>	<b>5.9</b>

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

31. NO<sub>x</sub>, CO and NMVOC emissions were reported as “NE” in the BUR. The Party reported in the BUR that this was due to a lack of data and the high uncertainty involved in estimating those emissions. During the technical analysis, it clarified that to address those challenges, it needs to strengthen its QA/QC procedure in relation to the preparation of future BURs, enhance its institutional arrangements for collecting AD and enhance the capacity of local experts to use the 2006 IPCC Guidelines and IPCC inventory software.

32. Vanuatu 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.

33. Comparable information addressing the tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF and the sectoral reporting tables annexed to the Revised 1996 IPCC Guidelines was not reported in Vanuatu's BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party acknowledged that it is not familiar with the relevant requirement in decision 2/CP.17, annex III, paragraph 6.

34. The shares of emissions that different sectors contributed to the Party's total GHG emissions excluding land and HWP (category 3.B and, if reported, 3.D), as calculated by the TTE using information from the BUR, in 2017 are reflected in table 2.

Table 2  
**Shares of greenhouse gas emissions by sector of Vanuatu for 2017**

<i>Sector</i>	<i>GHG emissions (Gg CO<sub>2</sub> eq)</i>	<i>% share<sup>a</sup></i>	<i>% change 2010–2017</i>
Energy	161.19	26.9	34.7
IPPU	NE	NA	NA
AFOLU	399.53	66.6	–3.7
Livestock (category 3.A)	384.42	64.0	NA
Land (category 3.B)	NE	NA	NA
Aggregate sources and non-CO <sub>2</sub> emissions sources on land (category 3.C)	15.11	2.5	NA
HWP and other emissions (category 3.D)	NE	NA	NA
Waste	39.57	6.5	22.7

<sup>a</sup> 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)).

35. Vanuatu reported information on its use of GWP values consistent with those provided by the IPCC in its AR5 based on the effects over a 100-year time-horizon of GHGs.

36. For the energy sector, information was clearly reported on total GHG emissions, methodological tier levels, key categories and notation keys used. Emissions from the energy sector increased by 8.8 per cent between 2016 and 2017, from 148.12 to 161.19 Gg CO<sub>2</sub> eq, accounting for 26.9 per cent of total national GHG emissions for 2017. The main driver of the trend in emissions is increasing fossil fuel combustion in the major sectors of the economy, namely electricity, industry, tourism, transportation, fishing and agriculture.

37. Emissions for category 1.A fuel combustion activities were reported at a very aggregated level, with estimates provided on an aggregated basis for electricity generation (27.1 per cent of total emissions from the fuel combustion activities), manufacturing industries and construction (15.1 per cent), transport (53.4 per cent) and other (cooking, lighting, space heating, space cooling, refrigeration and pumping in the residential, commercial and agriculture) sectors (4.4 per cent). The Party did not report the AD, EFs or net calorific values underlying its estimations. During the technical analysis, the Party clarified that owing to a lack of data, it was not possible to report further disaggregated emissions. In addition, the BUR (p.164) indicates that there is no available energy balance table containing a systematic and detailed overview of energy sources, consumption and flows in the country.

38. For the IPPU sector, Vanuatu reported emissions for categories 2.A, 2.B, 2.C and 2.E as “NO”, explaining that no major industry exists in the country, and emissions for categories 2.D, 2.F, 2.G and 2.H as “NE”.

39. The Party did not clearly report the reason for reporting “NE” for the aforementioned categories in its BUR, indicating only that emissions were not estimated owing to an absence of any major emissions from these sources. During the technical analysis, Vanuatu clarified that it decided to consider emissions for categories 2.G and 2.H as negligible on the basis of expert judgment and taking into account the small number of manufacturing companies in the country. For categories 2.D and 2.F, it reported that it found it challenging to collect the AD needed.

40. For 2006 IPCC Guidelines AFOLU categories 3.A and 3.C, subcategories 3.A.1 enteric fermentation (CH<sub>4</sub>), 3.A.2 manure management (CH<sub>4</sub>) and 3.C.6 indirect N<sub>2</sub>O emissions from manure management were identified as key categories and the only emissions sources in the sector. Vanuatu used EFs from the 2006 IPCC Guidelines and presented the numbers of livestock (BUR tables 21–23).

41. The livestock numbers in BUR table 21 were not in a comprehensible format (thousands separators were not used). During the technical analysis, the Party clarified that the data needed were not available in the correct format and that data gaps made it difficult to estimate emissions. Information was not reported on the amount of fertilizer used. The



Party reported that this is because fertilizer is not used in the country, and therefore reported net CO<sub>2</sub> and N<sub>2</sub>O emissions for category 3.C as “NE”, except for indirect N<sub>2</sub>O emissions from manure management.

42. Emissions for category 3.B (land) were not reported in Vanuatu’s BUR. However, the Party provided relevant clarification in its BUR, namely that 2015 was the last year in which net removals from the forest sector were estimated for the LULUCF sector; such removals were not estimated for 2016–2017. Further, the Party noted in its BUR that it is implementing its REDD+ programme and that more qualitative data and information on the forestry sector will be available in the near future, with higher-tier methods used in future GHG inventories.

43. For the waste sector, information was reported only on GHG emissions for categories 4.A (waste disposal) and 4.D (wastewater treatment and disposal), methodological tier levels and AD on solid waste management from urban areas. Vanuatu provided information on the average amount of solid waste generated per capita, which increased from 0.43 kg/person/day in 2011 to around 1.5 kg/person/day in 2017. Emissions from the waste sector increased by 3.1 per cent between 2016 and 2017, from 38.39 to 39.57 Gg CO<sub>2</sub> eq, with the waste sector accounting for 6.5 per cent of the total national GHG emissions for 2017.

44. Information on why the Party reported “NE” for emissions for category 4.C (incineration and open burning of waste) was not clearly reported in Vanuatu’s BUR. The BUR indicates that emissions from municipal solid waste dumps in rural areas are minimal as those living in rural areas, who represent 73 per cent of the national population, recycle most organic waste; and that, owing to an absence of actual AD, generation of municipal solid waste was estimated on the basis of the population of the cities of Port Vila, Luganville and Lenakel (resulting in an estimated average of 1–1.5 kg/person/day) and waste composition was taken from a 2015 study by the Japanese Technical Cooperation Project for Promotion of Regional Initiative on Solid Waste Management in Pacific Island Countries. In addition, information on wastewater treatment and disposal was not clearly reported in the BUR. The BUR indicates that wastewater generation from commercial activities is negligible, with the main source of wastewater being domestic sewage water, and that a tier 1 approach was used to estimate emissions from domestic wastewater treatment. During the technical analysis, Vanuatu explained that the required data are not available in a usable format and that data gaps made it difficult to estimate the related emissions.

45. The BUR does not provide an update to the GHG inventories reported in the Party’s NC1, NC2 and NC3. It provides estimates of total emissions by sector and by gas at a very aggregated level for 2016–2017, as well as updates for 2010 and 2015. The TTE noted that in previous submissions the Party also provided information for 1994 (base year), 2000 and 2007–2015. During the technical analysis, the Party clarified that it had difficulties in implementing paragraph 7 of annex III in decision 2/CP.17 owing to a lack of data and expressed a capacity-building need in relation to using splicing techniques from the 2006 IPCC Guidelines and recalculating the information reported in previous submissions.

46. Vanuatu described in its BUR the institutional framework for the preparation of its 2016–2017 GHG inventory. The Party reported that the Ministry of Climate Change, through the Department of Climate Change, is the governmental body responsible for its climate change policy and GHG inventory. The Party also reported that, for its GHG inventories, data were collected from ministries and their departments, organizations, institutions and public and private sector entities through an official notification from the Director General of the Ministry of Climate Change, and the collected data were archived by the Department of Climate Change. However, no formal institutional arrangements are in place for the data-collection process to ensure consistency in data collection.

47. Information on the formal procedures and arrangements for collecting and archiving data for the preparation of the GHG inventory on a continuous basis was not reported in the Party’s BUR. During the technical analysis, the Party clarified that there are no such institutional arrangements in place, and that the 2016–2017 GHG inventory was prepared as a one-off project.

48. Vanuatu reported that a key category analysis was performed for the level of and trend in emissions. It clearly reported this analysis for the level of emissions, but reported that this analysis excluded removals. The Party identified improvements in its reporting such as the

inclusion of a new analysis if information on removals becomes available, the performance of a level assessment for the base year of the inventory and the latest inventory year, and the use of qualitative criteria to identify additional key categories.

49. The BUR provides information on QA/QC measures for all sectors. The information reported indicates that an internal QA/QC plan was developed and the roles and responsibilities of BUR and GHG inventory team members defined, and then applied to all levels of data collection, inventory preparation and reporting. The BUR also indicates that a third-party review of the Party's national inventory report was coordinated by UNDP and UNEP under the Global Support Programme for Preparation of National Communications and Biennial Update Reports by non-Annex I Parties.<sup>2</sup>

50. Vanuatu reported information on CO<sub>2</sub> fuel combustion emissions using both the sectoral and the reference approach. The information reported indicates that the combustion emissions estimated under the sectoral and the reference approach are 159.67 Gg CO<sub>2</sub> in both cases for 2017. The difference between the estimates calculated using the two approaches was therefore reported as 0 per cent.

51. The Party reported that only information on fuel combustion was used to estimate emissions under the reference approach, which resulted in the difference of 0 per cent. During the technical analysis, the Party clarified that this was due to difficulties in developing an energy balance table and a need to enhance the capacity of national experts to include information under the reference approach in the IPCC inventory software.

52. Information was reported on international aviation and marine bunker fuels. The Party reported emissions of 23.00 Gg CO<sub>2</sub> eq from international aviation and 1.43 Gg CO<sub>2</sub> eq from marine bunker fuels for 2017.

53. The Party did not report the AD and EFs used to estimate emissions from international aviation and marine bunker fuels. During the technical analysis, it clarified that it collected AD directly from the operators and identified difficulties in compiling the energy balance table.

54. Vanuatu reported information on the uncertainty assessment (level) of its national GHG inventory. The uncertainty analysis was based on approach 1 of the 2006 IPCC Guidelines and covers all source categories except category 3.B and all direct GHGs. The results obtained, as reported in the BUR, reveal that the level uncertainty for emissions is 23 per cent (excluding land and HWP) and the trend uncertainty is 6 per cent (excluding land and HWP).

55. Information on the base year of the uncertainty assessment was not reported in the Party's BUR, though it was provided for the NC1, NC2 and NC3. During the technical analysis, the Party clarified that it needs to enhance the capacity of national experts involved in the uncertainty assessment, for example to use the IPCC inventory software.

56. The TTE noted that the transparency of the information reported on GHG inventories could be enhanced by addressing the areas noted in paragraphs 29, 33, 37, 39, 41, 42, 44, 45, 47, 51, 53 and 55 above, which could facilitate a better understanding of the information reported on GHG inventories.

57. Vanuatu reported in its BUR (section 2.7) information on its areas for improvement for future BURs for compliance with requirements under the ETF. The initiatives relate to capacity-building needs proposed for the Party, particularly in relation to adhering to the UNFCCC reporting guidelines on BURs and the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties, using the 2006 IPCC Guidelines and IPCC inventory software, formalizing institutional arrangements and standardizing processes pertaining to GHG inventory preparation, specifically as regards data collection. The TTE commends the Party for the clear and comprehensive reporting on its proactive approach to preparing for ETF implementation.

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<sup>2</sup> This Programme has since merged with the CBIT Global Coordination Platform.

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

58. As indicated in table I.2, Vanuatu 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.

59. The information reported provides a comprehensive overview of the Party's mitigation actions and their effects. In its BUR, Vanuatu reported information on its national context and framed its national mitigation planning and actions in the context of its first and updated NDCs, the NERM and the circular economy. It reported that climate change has been mainstreamed in and integrated into its development plans. Most of the mitigation actions are in the energy sector. The BUR presents estimated net GHG emissions by 2030, projected using a statistical model, under three scenarios: WOM ('business as usual' scenario), WEM (existing NDC scenario) and WAM (enhanced NDC scenario). Net GHG emissions were estimated to be 624.26 Gg CO<sub>2</sub> eq under the WOM scenario, 552.82 Gg CO<sub>2</sub> eq under the WEM scenario and 467.25 Gg CO<sub>2</sub> eq under the WAM scenario. In terms of emission reductions relative to the WOM scenario, emissions under the WEM scenario are projected to fall by 11 per cent (equating to 71.43 Gg CO<sub>2</sub> eq) and under the WAM scenario by 25 per cent (157.01 Gg CO<sub>2</sub> eq) by 2030.

60. Vanuatu reported on the mitigation component of its updated NDC in its BUR, providing information on mitigation targets in key sectors, including emission reductions in some subsectors. Vanuatu has a sector-specific target of transitioning to nearly 100 per cent renewable energy in the electricity sector by 2030. The sectors covered by the updated NDC are energy, AFOLU and waste; the IPPU sector was reported as not applicable. The mitigation actions in the energy sector were divided into three subsectors: energy industries (one action pertaining to electricity generation), the transport sector (four actions) and other subsectors (four actions in the commercial, institutional and residential areas). These actions were collectively estimated to reduce GHG emissions by 78.79 Gg CO<sub>2</sub> eq by 2030 compared with the WOM scenario. In the AFOLU sector, three actions were reported in the livestock subsector. The actions in the livestock subsector were estimated to reduce net GHG emissions by 30.98 Gg CO<sub>2</sub> eq by 2030 compared with the WOM scenario. In the waste sector, the mitigation actions related to the subsectors of solid waste management (four actions) and wastewater treatment and disposal (two actions) and were projected to reduce net GHG emissions by 29.34 Gg CO<sub>2</sub> eq by 2030 compared with the WOM scenario. Several mitigation actions in the updated NDC are a continuation and expansion of efforts listed in the first NDC, which Vanuatu has already begun to implement. The TTE acknowledged this information, which is presented in this summary report as contextual, without assessing the completeness and transparency of the information.

61. The Party reported a summary of its sectoral mitigation actions in tabular format in accordance with decision 2/CP.17, annex III, paragraph 11. The actions were grouped according to whether they came from the NERM 2016–2030 (energy sector), the first or updated NDCs or related to circular economy. The Party also reported information on its mitigation actions in narrative format.

62. Consistently with decision 2/CP.17, annex III, paragraph 12(a), Vanuatu reported the names of mitigation actions or groups of actions and provided a description and progress indicators for most of the actions.

63. Information on gases covered was not reported for any mitigation action, and information on quantitative goals was not reported for some mitigation actions, in Vanuatu's BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that this was due to a lack of national capacity to track the progress of implementation over time and the limited knowledge of sectoral experts on progress tracking.

64. With regard to the mitigation actions taken from the Party's NERM, first and updated NDCs and circular economy actions, Vanuatu did not report information on methodologies, assumptions, steps taken or envisaged to achieve those actions, underlying steps for tracking progress of implementation or results achieved and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that this was due to a lack of national

capacity to manage and track the progress of implementation of the action over time and the limited knowledge of sectoral experts of this process.

65. The mitigation actions in the energy sector considered under the NERM focus mainly on promoting renewable energy sources and enabling access to electricity. A total of 18 of these actions were reported as implemented (BUR table 34) and 27 were reported as ongoing or planned (BUR tables 35–38). Implemented projects are aimed at increasing access to clean, sustainable energy sources, improving energy efficiency and promoting green growth. Most of the ongoing or planned projects have high impact potential but face financial challenges. Collaboration with international partners, such as the World Bank, the GEF and UNDP, is a common feature. A number of these initiatives focus on off-grid electrification and renewable energy, ensuring sustainable and inclusive energy access. The Party clearly reported information on the objectives of the actions.

66. Information on the progress of implementation of some mitigation actions in the energy sector considered under the NERM was inconsistent. For example, for the action “Coconut for Fuel Strategy”, status of implementation was reported as “proposed” in BUR table 37 and as “under implementation” in BUR table 38, while the action “Talise 75 kW Micro Hydro Power Project” was reported as “commissioned and operational” in BUR table 37 and as “under preparation” in BUR table 39. During the technical analysis, the Party clarified that this was due to limited or a lack of data for tracking the progress of implementation of the actions. It also mentioned that it recently developed a new progress tracker which will be implemented across various sectors and will facilitate comprehensive reporting on mitigation actions.

67. The Party reported in narrative format information on the mitigation actions included in its first NDC, including on its objective of transitioning to nearly 100 per cent renewable energy in the electricity sector by 2030. It reported the objectives and progress of implementation for some of these actions, including the following key actions under implementation or preparation with the potential to significantly reduce emissions: “Vanuatu Rural Electrification Project”, “Talise Hydro Power Project”, “Coconut for Fuel Strategy” and the revision of the Electricity Supply Act. The action entitled “Coconut for Fuel Strategy” is estimated to have the biggest impact (57 per cent of electricity will come from coconut oil by 2030). In addition, the Party proposed two options for achieving its NDC target: installing power plants with capacities of 7.6 MW solar power and 5.1 MW wind power with the potential to contribute around 30 per cent of the 100 per cent renewable energy target at a cost of USD 73.3 million, or using geothermal energy (expected to contribute 36 per cent of the 100 per cent renewable energy target) and installing power plants with capacities of 7.6 MW solar power and 2.6 MW wind power at a cost of USD 66.5 million (excluding the cost of the geothermal project).

68. The Party reported on additional mitigation actions from its updated NDC in tabular format (BUR table 40), grouped under the energy sector (transport and other), the livestock subsector and the waste sector (solid waste management and wastewater treatment and disposal). Information was reported on the estimated outcomes of these actions in the form of annual emission reductions (157.01 Gg CO<sub>2</sub> eq/year collectively). The Party also reported the estimated costs of implementing the actions (USD 173.60 million in total) and identified them as planned and conditional upon receiving international (financial and technical) support.

69. Vanuatu, separate from the mitigation actions under the NDC (first and updated) and the NERM, reported on its circular economy actions and their objectives in narrative format and included information on complementary opportunities for further enhancing its mitigation pledge under the Paris Agreement. In its BUR, it reported that 59 per cent of resources in Vanuatu are estimated to be consumed on a circular basis. For the remaining 41 per cent, the Party identified opportunities such as converting grassland to silvopastoral livestock; applying anaerobic digestion to municipal, industrial and agricultural organic waste; collaborating with development partners to develop the practice of incorporating circular economy principles into procurement processes with the aim of reducing waste and promoting sustainability; aligning the national tax regime with development ambitions, such as by imposing taxes on polluting activities and using the revenues generated to support the transition to a circular economy; and collecting and sorting recyclable materials and

exporting those that cannot be used or processed domestically. If realized, these opportunities have the potential to reduce solid waste by around 44 per cent by 2030 compared with 2021, as well as reduce primary resource extraction and the trade deficit. They could also reduce domestic GHG emissions by 10 per cent by 2030 compared with 2021 for all sectors, or by 44 per cent when considering emissions from all sectors excluding livestock.

70. Vanuatu did not provide information on its involvement in international market mechanisms as a Party to the Kyoto Protocol. The TTE noted that the Party reported in its BUR that it is working on defining, piloting and scaling up its involvement in market-based mechanisms. During the technical analysis, the Party clarified that capacity-building is needed to enable it to report on its involvement in international market mechanisms.

71. Vanuatu reported information on its domestic MRV arrangements in accordance with decision 2/CP.17, annex III, paragraph 13. The information reported indicates that Vanuatu has developed a domestic MRV system for mitigation actions as a module in an integrated MRV system. It reported that this system for mitigation actions provides information on progress towards meeting its NDC and non-NDC commitments, including GHG reductions, and progress and gaps in implementing mitigation actions, and that it will be updated periodically. The system works by identifying mitigation actions, as well as the relevant indicators and parameters, to be monitored; storing the monitored data in a central database for processing and analysis; conducting verification and QA/QC checks of the stored data; and reporting on the outcomes.

72. The TTE noted that the transparency of the information reported on mitigation actions could be enhanced by addressing the areas noted in paragraphs 63, 64, 66 and 70 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**

73. As indicated in table I.3, Vanuatu 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.

74. Vanuatu clearly reported information on constraints and gaps, and related financial, technical and capacity-building needs in accordance with decision 2/CP.17, annex III, paragraph 14. In its BUR, Vanuatu identified as constraints its weak institutional framework, resulting from a lack of climate-related technical support, an inability to monitor and evaluate climate change and its impacts and unavailability of funds for employing government staff on a permanent basis to carry out climate-related technical work. It also reported constraints in relation to implementing mitigation and adaptation actions, particularly a lack of funding for their implementation, knowledge-sharing, decision support tools and risk reduction strategies. Regarding the GHG inventory, Vanuatu reported that it faces serious challenges in reporting in accordance with the UNFCCC reporting guidelines on BURs, such as a lack of or unavailability of data and information, a lack of data archiving and a lack of country-specific EFs. Vanuatu reported that its financial, technical and capacity-building needs are primarily in the area of preparing its GHG inventory, especially as regards collecting data and reporting on mitigation actions.

75. Vanuatu did not report on its financial and technical needs related to the institutional arrangement constraints identified. During the technical analysis, the Party clarified that it did not assess these needs in all areas of its reporting during the preparation of its first BUR and that it intends to incorporate such information into future reports.

76. Vanuatu 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, it reported that it received a total of USD 200 million in financial support (BUR table 42) during 2014–2022 from bilateral and multilateral sources for climate action in the areas of, inter alia, agriculture, water, coastal and marine resources, infrastructure and tourism, with infrastructure accounting for 56 per cent of this support owing to recovery efforts in the wake of Cyclone Pam and improvement works to major roads and wharves. Of this support, 89 per cent was allocated to adaptation activities and 9 per cent

to mitigation activities, with the remaining 2 per cent related to disaster risk reduction and supporting mechanisms for mitigation and adaptation, such as capacity development, strengthened institutional systems and governance. It also reported that the funds received were in the form of grants and aid in kind (88 per cent) and concessional loans (12 per cent), with Australia being Vanuatu's largest bilateral donor for climate change. The World Bank is the largest multilateral source of funding for Vanuatu and has implemented a range of climate change related projects, such as the reconstruction and improvement of public assets damaged by Cyclone Pam, the strengthening of institutional arrangements for GHG inventory preparation and the implementation of energy sector actions and the national REDD+ readiness project. The Asian Development Bank is the second largest multilateral source, followed by the GCF. The information reported also indicates that Vanuatu received capacity-building and technical support from the UNDP to facilitate its use of the 2006 IPCC Guidelines for preparing its GHG inventory.

77. In its BUR, Vanuatu reported that its NC3 was prepared by the Ministry of Climate Change in collaboration with UNDP without stating the amount of financial support received from the GEF for the preparation of its first BUR. During the technical analysis, the Party clarified that the amount of support received for the BUR was reported on an aggregated basis in BUR section 4 and the MRV system related to needs and support received had not yet been formalized, which prevented it from reporting separately the information on the amount of support received from the GEF for preparing its BUR.

78. Vanuatu 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, Vanuatu reported that its TNA is implemented through UNEP Copenhagen Climate Centre<sup>3</sup> and that the process to identify technology needs was conducted nationally. It also reported (BUR table 44) that the mitigation areas selected for the TNA, namely energy and waste-to-energy, were decided by the National Advisory Board to the Ministry of Climate Change in order to be consistent with national efforts towards achieving green development and strengthening Vanuatu's reputation as a responsible global citizen.

79. 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 75 and 77 above, which could facilitate a better understanding of the information reported on needs and support received.

## **5. Any other information**

80. Vanuatu reported some information on its vulnerability to the impacts of climate change and the importance of adaptation actions that may lead to GHG emission reductions, without providing estimations of such reductions. During the technical analysis, the Party clarified that the MRV procedures related to the adaptation activities include tracking adaptation actions, monitoring, collecting data and reporting results. It also provided a gender analysis and reported on the notable role of women in the areas of addressing climate change impacts and boosting resilience.

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

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

- (a) In relation to GHG inventories:
  - (i) Enhancing understanding of the methodologies and data sets necessary for complying with the reporting requirements for F-gases;
  - (ii) Enhancing understanding of the methodologies for estimating emissions of precursor gases and indirect emissions using the *EMEP/EEA air pollutant emission inventory guidebook 2019* (chap. 7);

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<sup>3</sup> Formerly UNEP DTU Partnership.

- (iii) Developing data-collection procedures for the IPPU sector, as well as for categories 3.B and 3.C, as appropriate;
- (iv) Strengthening the QA/QC procedure for GHG inventory preparation, including by developing a GHG inventory improvement plan;
- (v) Establishing standards for collecting data from private and public entities to ensure the quality of AD used in estimations for all sectors and categories in accordance with the 2006 IPCC Guidelines;
- (vi) Developing the energy balance to facilitate GHG inventory reporting for the energy sector on a continuous basis;
- (vii) Building the capacity of experts involved in data-collection and emission-estimation processes to use the 2006 IPCC Guidelines and IPCC inventory software;
- (viii) Building the capacity to adhere to the UNFCCC reporting guidelines on BURs and the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties in order to ensure consistent time series covering the years reported in previous NCs and include comparable information addressing the sectoral reporting tables annexed to the Revised 1996 IPCC Guidelines and the tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF;
- (ix) Building the capacity to use splicing techniques from the 2006 IPCC Guidelines to ensure consistent time series back to the base year (1994);
- (x) Building the capacity to establish a GHG inventory management system to ensure the submission of GHG inventories on a continuous basis;
- (b) In relation to mitigation actions and their effects:
  - (i) Enhancing national capacity to report on the methodologies and assumptions underlying mitigation actions, as well as steps taken or envisaged to achieve those actions, results achieved, mitigation potential and GHG and non-GHG benefits and gases covered;
  - (ii) Enhancing national capacity to report information on international market mechanisms;
  - (iii) Further enhancing national capacity to expand the existing MRV system for data collection to the sectoral level to enable the tracking of progress in implementing and the effects of mitigation actions;
- (c) In relation to needs and support, enhancing human and institutional capacity and technical skills to facilitate reporting on a disaggregated basis on financial, technical and capacity-building needs and financial resources, technology transfer, capacity-building and technical support received;
- (d) In relation to cross-cutting issues:
  - (i) Enhancing national capacity to access technical resources to facilitate the submission of NCs and BURs on a continuous basis;
  - (ii) Enhancing national capacity to establish a regulatory and legal framework for climate change to facilitate the preparation of NCs and BURs on a continuous basis;
  - (iii) Enhancing human and institutional capacity and technical skills required to prepare GHG inventories, NCs and BURs;
  - (iv) Enhancing national capacity to operationalize the MRV system to facilitate the preparation of high-quality GHG inventories, NCs and BURs on a continuous basis;
  - (v) Enhancing national capacity to access financial resources to expand the national MRV system for data collection to the sectoral level to facilitate the preparation of NCs and BURs on a continuous basis.

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

- (a) Understanding the UNFCCC reporting guidelines on BURs and the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties for a detailed and accurate GHG inventory;
- (b) Improving the quality of GHG inventory data, calculations and reporting, as well as of the key category analysis, uncertainty estimates and subsequent improvement planning;
- (c) Improving the MRV system, including by developing appropriate training (in person and virtual), training materials, modules and hands-on exercises on the established national MRV framework and associated databases and tools, as well as on addressing issues such as data gaps and inconsistencies during QA/QC.

### III. Conclusions

83. The TTE conducted a technical analysis of the information reported in the first BUR of Vanuatu 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; and domestic MRV. During the technical analysis, additional information was provided by Vanuatu on GHG inventory preparation, mitigation actions and their effects, needs and support and cross-cutting issues. The TTE concluded that the information analysed is partially transparent.

84. Vanuatu reported information on the institutional arrangements relevant to the preparation of its BURs, as well as on its domestic MRV arrangements, which are designed at the national level and cover five main areas: the GHG inventory system, mitigation actions, adaptation actions, climate finance flows and sustainable development goals. The arrangements are newly established and will build on the existing systems, processes and infrastructure, rendering them cost-effective.

85. In its first BUR, submitted in 2021, Vanuatu reported information on its national GHG inventory for 2016–2017. This included GHG emissions and removals of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O for the energy, waste and agriculture sectors. The inventory was developed on the basis of the methodologies from the 2006 IPCC Guidelines and default EFs from those Guidelines were applied for all categories reported. The total GHG emissions for 2017 were reported as 600.28 Gg CO<sub>2</sub> eq (excluding land and HWP). Ten key categories and main gases were identified in the energy sector (CO<sub>2</sub> for subcategory 1.A.3.b road transportation being the most significant), AFOLU sector (CH<sub>4</sub> for subcategory 3.A.1 enteric fermentation being the most significant) and waste sector (CH<sub>4</sub> for category 4.A solid waste disposal). The Party reported as “NE” emissions from the IPPU sector (categories 2.D, 2.F, 2.G and 2.H), all subcategories under category 3.B, several subcategories under category 3.C (3.C.1, 3.C.4 and 3.C.5) and the incineration and open burning of waste. Estimates of F-gas, precursor gas, indirect and other emissions were reported as “NE” owing to a lack of AD or negligible amounts, as indicated by the Party in the BUR and clarified during the technical analysis.

86. Vanuatu reported information on mitigation actions and their effects in both tabular and narrative format, including planned, implemented, ongoing and completed actions in the energy sector and planned actions for the waste and AFOLU sectors. Overall, the mitigation actions focus on promoting renewable energy sources and enabling access to electricity. The Party reported the progress of implementation of its mitigation actions and that, in terms of emission reductions relative to the WOM scenario, emissions are projected to fall by 11 per cent (71.43 Gg CO<sub>2</sub> eq) under the WEM scenario and by 25 per cent (157.01 Gg CO<sub>2</sub> eq) under the WAM scenario by 2030. The Party also reported information on MRV arrangements. Estimates of emission reductions and information on methodologies, assumptions and gases covered were not provided owing to a lack of national capacity to manage and track the progress of implementation of mitigation actions over time and the limited knowledge of sectoral experts of this process, as indicated by the Party in its BUR



and clarified during the technical analysis. Vanuatu did not provide information on its involvement in international market mechanisms owing to a lack of national capacity to report such information, as clarified by the Party during the technical analysis.

87. Vanuatu reported information on key constraints, gaps and related needs, including a weak institutional framework, which is largely due to inadequate climate-related technical support, monitoring capabilities and funding for dedicated staff. It also identified challenges in implementing mitigation and adaptation actions, which are predominantly due to insufficient funding and knowledge-sharing mechanisms. The Party faces challenges in adhering to the UNFCCC reporting guidelines on BURs owing to a lack of data required for the preparation of its GHG inventory. Information was reported on the technical, technology transfer and capacity-building support received, including USD 200 million in financial support during 2014–2022 from bilateral and multilateral sources for climate action in the areas of, inter alia, agriculture, water, coastal and marine resources, infrastructure and tourism. The Party also reported that it received financial support from the GEF for preparing its first BUR, but did not state the amount of the financial support received.

88. The TTE, in consultation with Vanuatu, identified the 19 capacity-building needs listed in chapter II.D above and needs for capacity-building that aim to facilitate reporting in accordance with the UNFCCC reporting guidelines on BURs and participation in ICA in accordance with the ICA modalities and guidelines, taking into account Article 4, paragraph 3, of the Convention. Vanuatu prioritized all the capacity-building needs referred to in paragraph 81 above.

## Annex I

### Extent of the information reported by Vanuatu 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 Vanuatu**

<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	Vanuatu submitted its first BUR in December 2021; the GHG inventory reported is for 2016–2017.
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	Vanuatu used the 2006 IPCC Guidelines.
Decision 2/CP.17, annex III, paragraph 5	The updates of the section on national inventories of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol should contain updated data on activity levels based on the best information available using the Revised 1996 IPCC Guidelines, the IPCC good practice guidance and the IPCC good practice guidance for LULUCF; any change to the EF may be made in the subsequent full NC.	Partly	Vanuatu provided updates for 2010 and 2015 only, and at a very aggregated level. AD were available for livestock, solid waste management and wastewater treatment and disposal only.
Decision 2/CP.17, annex III, paragraph 6	Non-Annex I Parties are encouraged to include, as appropriate and to the extent that capacities permit, in the inventory section of the BUR:		
	(a) The tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF;	No	Comparable information was not reported.
	(b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines.	No	Comparable information was not 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	Vanuatu did not provide a consistent time series back to the years reported in the previous NCs. The time series reported in the BUR does not include 1994 (base year), 2000 and 2007–2009 and 2011–2014.
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).  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	Partly	Vanuatu provided estimates in summary tables for 2010, 2015, 2016 and 2017, despite previous NCs providing information for 1994, 2000 and 2007–2015.

<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 9	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); (b) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF <sub>6</sub> ).	Partly  Yes	The Party reported emission estimates for 2017 mostly at the aggregated category level.  The Party reported emissions of HFCs, PFCs and SF <sub>6</sub> as “NE”.
Decision 2/CP.17, annex III, paragraph 10	Additional or supporting information, including sector-specific information, may be supplied in a technical annex.	NA	
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 institutional arrangements was provided, but not on improvements envisaged to facilitate reporting on a continuous basis.
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 <sub>2</sub> ; (b) CH <sub>4</sub> ; (c) N <sub>2</sub> O.	Partly  Partly  Partly	Emissions were not estimated for several IPPU, AFOLU and waste categories for which IPCC methodologies are available and under which emissions occur.  Emissions were not estimated for several IPPU, AFOLU and waste categories for which IPCC methodologies are available and under which emissions occur.  Emissions were not estimated for several IPPU, AFOLU and waste categories for which IPCC methodologies are available and under which emissions occur.
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; (b) PFCs; (c) SF <sub>6</sub> .	Yes  Yes  Yes	The Party reported emissions of HFCs, PFCs and SF <sub>6</sub> as “NE”.

<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 16	Non-Annex I Parties are encouraged, as appropriate, to report on anthropogenic emissions by sources of other GHGs, such as: <ul style="list-style-type: none"> <li>(a) CO<sub>2</sub>;</li> <li>(b) NO<sub>x</sub>;</li> <li>(c) NMVOCs.</li> </ul>	Yes	The Party reported emissions of CO as “NE”.
		Yes	The Party reported emissions of NO <sub>x</sub> as “NE”.
		Yes	The Party reported emissions of NMVOCs as “NE”.
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	The Party reported emissions of sulfur oxides as “NE”.
Decision 17/CP.8, annex, paragraph 18	Non-Annex I Parties are encouraged, to the extent possible, and if disaggregated data are available, to estimate and report CO <sub>2</sub> fuel combustion emissions using both the sectoral and the reference approach and to explain any large differences between the two approaches.	No	Information was reported for both the sectoral and the reference approach, but the reference approach only included data on fuel consumption.
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: <ul style="list-style-type: none"> <li>(a) International aviation;</li> <li>(b) Marine bunker fuels.</li> </ul>	Yes	
		Yes	
Decision 17/CP.8, annex, paragraph 20	Non-Annex I Parties wishing to report on aggregated GHG emissions and removals expressed in CO <sub>2</sub> eq should use the GWP provided by the IPCC in its AR2 based on the effects of GHGs over a 100-year time-horizon.	NA	The Party used the GWP provided in the AR5.
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: <ul style="list-style-type: none"> <li>(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;</li> <li>(b) Explanation of the sources of EFs;</li> </ul>	Yes	Vanuatu used the 2006 IPCC Guidelines for all categories. Tier 1 methodology was used for all sectors.
		Partly	The BUR does not contain an explanation of the sources of EFs for categories other than livestock, solid waste

<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>
			management and wastewater treatment and disposal.
	(c) Explanation of the sources of AD;	Partly	Only the sources of AD on livestock, solid waste management and wastewater treatment and disposal were included in 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	
Decision 17/CP.8, annex, paragraph 22	Each non-Annex I Party is encouraged to use tables 1–2 of the guidelines annexed to decision 17/CP.8 in reporting its national GHG inventory, taking into account the provisions established in paragraphs 14–17. In preparing those tables, Parties should strive to present information that is as complete as possible. Where numerical data are not provided, Parties should use the notation keys as indicated.	Yes	
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;	Yes	
	(c) Methodologies used, if any, for estimating these uncertainties.	Yes	

*Note:* The parts of the UNFCCC reporting guidelines on BURs on reporting information on GHG emissions by sources and removals by sinks in BURs are contained in decision 2/CP.17, paras. 3–10 and 41(g). Further, as per para. 3 of those guidelines, non-Annex I Parties are to submit updates of their national GHG inventories in accordance with paras. 8–24 of the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties, contained in the annex to decision 17/CP.8. The scope of such updates should be consistent with the non-Annex I Party’s capacity and time constraints and the availability of its data, as well as the level of support provided by developed country Parties for biennial update reporting.

Table I.2

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

<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	The Party provided information on mitigation actions by group of actions in tabular format (BUR tables 34–40).
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	The Party provided the name and description of each action but did not specify the gases covered or, for some actions, the quantitative goals.
	(b) Information on:		
	(i) Methodologies;	Partly	The Party only reported the methodologies used for estimating impacts of the mitigation actions for the electricity sector as part of its first NDC (BUR table 30).
	(ii) Assumptions;	Partly	The Party provided information on the assumptions used for estimating impacts for some of the actions, namely the group of actions included in the first NDC (BUR table 30), but did not do so for the additional actions included in the updated NDC.
	(c) Information on:		
	(i) Objectives of the action;	Yes	
	(ii) Steps taken or envisaged to achieve that action;	Partly	The Party reported information on the steps taken to achieve some of the mitigation actions taken from the NERM (BUR tables 36–38).
	(d) Information on:		
	(i) Progress of implementation of the mitigation actions;	Partly	Information on progress of implementation was not provided for some actions.
	(ii) Progress of implementation of the underlying steps taken or envisaged;	Partly	The Party reported underlying steps taken or envisaged for some of the actions listed in BUR table 39; this information was not provided for some of the additional actions in the updated NDC.
	(iii) Results achieved, such as estimated outcomes (metrics depending on type of	Partly	The Party did not report estimated emission reductions for the actions in BUR tables 35–39.

<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>
	action) and estimated emission reductions, to the extent possible;		
	(e) Information on international market mechanisms.	Partly	Information on international market mechanisms was reported only in the context of carrying out preparatory work for involvement in market-based mechanisms.
Decision 2/CP.17, annex III, paragraph 13	Parties should provide information on domestic MRV arrangements.	Yes	

*Note:* The parts of the UNFCCC reporting guidelines on BURs on the reporting of information on mitigation actions in BURs are contained in 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 Vanuatu**

<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; (b) Related financial, technical and capacity-building needs.	Yes Yes	Information on financial, technical and capacity-building needs was reported.
Decision 2/CP.17, annex III, paragraph 15	Non-Annex I Parties should provide: (a) Information on financial resources, technology transfer and capacity-building received from the GEF, Annex II Parties and other developed country Parties, the GCF and multilateral institutions for activities relating to climate change, including for the preparation of the current BUR; (b) Information on technical support received from the GEF, Annex II Parties and other developed country Parties, the GCF and multilateral institutions for activities relating to climate change, including for the preparation of the current BUR.	Partly Yes	Vanuatu did not specify the amount of financial support received from the GEF for preparing the 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; (b) Technology support received.	Yes No	The Party did not provide information on technology support received by sector.

*Note:* The parts of the UNFCCC reporting guidelines on BURs on the reporting of information on finance, technology and capacity-building needs and support received in BURs are contained in decision 2/CP.17, annex III, paras. 14–16.

## Annex II

### Reference documents

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

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

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>.

#### B. UNFCCC documents

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

NC1, NC2 and NC3 of Vanuatu. Available at <https://unfccc.int/non-annex-I-NCs>.

#### C. Other documents

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

EEA. 2019. *EMEP/EEA air pollutant emission inventory guidebook 2019*. Luxembourg: Publications Office of the European Union. Available at <https://www.eea.europa.eu/publications/emep-eea-guidebook-2019>.

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