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Technical analysis of the second biennial update report of Peru submitted on 17 December 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. Further, paragraph 41(f) of that decision states that Parties not included in Annex I to the Convention shall submit a biennial update report every two years, either as a summary of parts of their national communication in the year in which the national communication is submitted or as a stand-alone update report. As mandated, the least developed country Parties and small island developing States may submit biennial update reports at their discretion. This summary report presents the results of the technical analysis of the second biennial update report of Peru, conducted by a team of technical experts in accordance with the modalities and procedures contained in the annex to decision 20/CP.19.

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Abbreviations and acronyms

AD	activity data
BUR	biennial update report
CDM	clean development mechanism
CGE	Consultative Group of Experts
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
HFC	hydrofluorocarbon
ICA	international consultation and analysis
INFOCARBONO	provisions for the preparation of the National Inventory of Greenhouse Gases in Peru
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
NA	not applicable
NAMA	nationally appropriate mitigation action
NC	national communication
NDC	nationally determined contribution
NIR	national inventory report
NMVOC	non-methane volatile organic compound
non-Annex I Party	Party not included in Annex I to the Convention
NO _x	nitrogen oxides
N ₂ O	nitrous oxide
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 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 ₆	sulfur hexafluoride
SO _x	sulfur oxides
TTE	team of technical experts
UNDP	United Nations Development 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	<i>2006 IPCC Guidelines for National Greenhouse Gas Inventories</i>

I. Introduction and process overview

A. Introduction

1. The process of ICA consists of two steps: a technical analysis of the submitted BUR and a facilitative sharing of views under the Subsidiary Body for Implementation, resulting in a summary report and a record, respectively.
2. According to decision 2/CP.17, paragraph 41(a), non-Annex I Parties, consistently with their capabilities and the level of support provided for reporting, were to submit their first BUR by December 2014. In addition, paragraph 41(f) of that decision states that non-Annex I Parties shall submit a BUR every two years, either as a summary of parts of their NC in the year in which the NC is submitted or as a stand-alone update report. The least developed countries and small island developing States may submit BURs 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. Peru submitted its first BUR on 30 December 2014, which was analysed by a TTE in the first round of technical analysis of BURs from non-Annex I Parties, conducted from 18 to 22 May 2015. After the publication of its summary report, Peru participated in the first workshop for the facilitative sharing of views, convened in Bonn on 20–21 May 2016.
5. This summary report presents the results of the technical analysis of the second BUR of Peru, undertaken by a TTE in accordance with the provisions on the composition, modalities and procedures of the TTE under ICA contained in the annex to decision 20/CP.19.

B. Process overview

6. In accordance with the mandate referred to in paragraph 2 above, Peru submitted its second BUR on 17 December 2019 as a stand-alone update report. The submission was made five years after the submission of the first BUR.
7. During the technical analysis, the Party clarified that the process for preparing the GHG inventory started in 2016 and a draft was available in 2017. However, in the meantime, the LULUCF sector was subject to an extensive QA/QC process: secondary vegetation could not be disaggregated owing to a lack of information, which led to a consultation and data collection process that delayed the completion of the GHG inventory to 2019. As a result, a delay in finalizing and submitting the second BUR occurred.
8. A desk analysis of the Party's BUR was conducted from 9 to 13 March 2020¹ 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: Selam Kidane Abebe (former member of the CGE from Ethiopia), Thiago de Araújo Mendes (former member of the CGE from Brazil), Fernando Farias (former member of the CGE from Chile), Liviu Gheorghe (Romania), Eduardas Kazakevicius (Lithuania), Mwangi James Kinyanjui (Kenya), Orlando Ernesto Rey Santos (Cuba), Hlobisile Sikhosana (Eswatini) and John Steller (United States of America). Mr. Kinyanjui and Mr. Steller were the co-leads. The technical analysis was coordinated by Marion Vieweg-Mersmann, Bhava Dhungana and Hiroaki Odawara (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

¹ Owing to the circumstances related to the coronavirus disease 2019, the technical analysis of the BUR submitted by Peru had to be conducted remotely.

TTE and Peru engaged in consultation² on the identification of capacity-building needs for the preparation of BURs and participation in the ICA process. Following the technical analysis of Peru's second BUR, the TTE prepared and shared a draft summary report with Peru on 15 June 2020 for its review and comment. Peru, in turn, provided its feedback on the draft summary report on 5 October 2020.

10. The TTE responded to and incorporated Peru's comments referred to in paragraph 9 above and finalized the summary report in consultation with the Party on 6 November 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 Peru'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 information on progress 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 mostly 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.

15. The TTE noted improvements in the reporting in the Party's second BUR compared with that in its first BUR. Information on the GHG inventory, mitigation actions and their effects, and needs and support reported in the Party's second BUR demonstrates that it has taken into consideration the areas for enhancing transparency noted by the previous TTE in the summary report on the technical analysis of the Party's first BUR.

16. Regarding the areas for enhancing understanding of the extent of the information reported in the BUR noted by the previous TTE, in the summary report on the technical analysis of the Party's previous BUR, Peru identified the areas that were not addressed in its

² The consultation was conducted via teleconferencing.

second BUR (see chap. 3, annex 1). They include estimating fluorinated gases and indirect emissions, including of CO, NO_x and NMVOCs, for the GHG inventory, which is a potential area for enhancing national capacity.

C. Technical analysis of the information reported

17. 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.

18. 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. Peru submitted an NIR as a stand-alone document and, further to consultations with the TTE, requested a more detailed analysis and documentation of findings in the NIR using the agreed GHG inventory tool.

19. 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

20. 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.

21. In its second BUR, Peru provided an update on its national circumstances, including governance structure, and an overview of social, geographical, climatic and economic aspects relevant to GHG emissions. The Party identified its national sustainable development priorities and included graphs, maps and tables illustrating key information on its national circumstances.

22. Peru transparently reported in its second BUR an update on its existing institutional arrangements relevant to the preparation of its NCs and BURs on a continuous basis. The description covers key aspects of the institutional arrangements. The Ministry of Environment, as the national environmental authority, is responsible for preparing BURs. Specifically, the second BUR was prepared by the Directorate General for Climate Change and Desertification under the Ministry of Environment. The Directorate created a project executing unit, which was funded by the GEF and implemented by UNDP in Peru, to prepare the BUR. Unlike the first BUR, which depended on the work of external consultants from outside the country, the second BUR was developed by experts from Peru, which enhanced the institutionalization of the GHG inventory preparation process. The role of entities outside the Ministry of Environment in supporting the preparation of the BUR and the GHG inventory is also described in the BUR. The TTE noted improvements to the information reported in the BUR, including more details on INFOCARBONO, established in December 2014, which is the regulatory framework that establishes the provisions for the preparation of the national GHG inventory. Peru explained how all of these changes and improvements contributed to developing a national framework for implementing the enhanced transparency framework under the Paris Agreement.

23. The current TTE noted the improvements referred to in paragraph 22 above and commends the Party for enhancing the transparency of its reporting.

24. Peru reported in its second BUR an update on its domestic MRV arrangements. The national framework for MRV is still at the planning stage. The measurement tools to be implemented include the national registry of GHG mitigation measures (under development), which will include the NAMAs and the national REDD+ registry as well as co-benefits of

activities, and Carbon Footprint Peru, a programme that identifies and measures the efforts of private and public entities to reduce their GHG emissions. INFOCARBONO, as the main GHG national inventory arrangement, was implemented before the second BUR was submitted, but it is part of a continuous improvement process. The national registry of GHG mitigation measures and its components are being developed with the support of the World Bank, UNDP, the GEF and the German Agency for International Cooperation. The tools will be managed by the Ministry of Environment.

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

25. As indicated in table I.1, Peru reported information on its GHG inventory in its BUR mostly 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. Peru submitted its second BUR in 2019 and the GHG inventory reported is for 2014, which is more than four years prior to the date of submission of the Party's BUR. During the technical analysis, Peru clarified that an initial version of the GHG inventory was prepared in 2017, but the QA/QC process for the LULUCF sector required a supplementary study that was only completed in 2019, resulting in the delay in submission.

27. Peru submitted an NIR in conjunction with its second BUR. The relevant sections of the NIR were referenced in the BUR and the document was also made publicly available on the UNFCCC website.³

28. GHG emissions and removals for the BUR covering the 2014 inventory were estimated using tier 1 methodology for almost all sectors. The 2006 IPCC Guidelines were used for the energy and IPPU sectors; the Revised 1996 IPCC Guidelines and the IPCC good practice guidance were used for the agriculture and waste sectors; and the IPCC good practice guidance for LULUCF was used for the LULUCF sector. The TTE commends the Party for its efforts to use more updated methodologies compared with those used for previous inventory submissions, in particular for its use of the 2006 IPCC Guidelines. The Party identified improvements in the reporting, such as the method used for calculating LULUCF sector estimates for 2012 and 2014.

29. Information on AD and EFs used and their sources was clearly reported in the BUR for each category and subcategory. In its BUR Peru reported that it plans to use higher-tier methodologies, including specific EFs, enhanced QA/QC processes and an estimation of uncertainties for AD and EFs.

30. Information on the Party's total GHG emissions by gas for 2014 is outlined in table 1 in Gg CO₂ eq. Peru reported an increase of 29,861.67 Gg CO₂ eq (47.8 per cent), excluding LULUCF, since 2000. Information on anthropogenic emissions by sources of HFCs, PFCs and SF₆ was not reported in Peru's BUR.

Table 1
Greenhouse gas emissions by gas of Peru for 2014

<i>Gas</i>	<i>GHG emissions (Gg CO₂ eq) including LULUCF</i>	<i>GHG emissions (Gg CO₂ eq) excluding LULUCF</i>
CO ₂	126 082.57	53 218.52
CH ₄	25 352.49	23 250.34
N ₂ O	16 194.71	15 815.43
HFCs	NA	NA
PFCs	NA	NA
SF ₆	NA	NA
Other	NA	NA
Total	167 629.76	92 284.30

Note: Data reported are based on data presented in table 3.4 of the second BUR. The slight differences to data presented in the NIR, table 4, are due to rounding.

³ <https://unfccc.int/BURs>.

31. Information on anthropogenic emissions by sources of CO, NO_x, NMVOCs and SO_x was not reported in Peru's BUR. However, the Party clarified in its BUR that there was not enough information available for estimating those emissions. In addition, Peru explained that estimating those emissions was not a priority during the current reporting cycle, but that it intends to estimate them for the next BUR.

32. Peru 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. The Party clearly explained its use of notation keys, which facilitated understanding of the information reported.

33. Peru reported 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.

34. The shares of emissions that different sectors contributed to the total GHG emissions including LULUCF in 2014 as reported by the Party are reflected in table 2.

Table 2

Shares of greenhouse gas emissions by sector of Peru for 2014

<i>Sector</i>	<i>GHG emissions (Gg CO₂ eq)</i>	<i>% share</i>	<i>% change 2000–2014</i>
Energy	50 330.59	26.5	62.6
IPPU	6 040.76	3.2	124.9
Agriculture	26 233.20	13.8	14.9
LULUCF	75 345.47	51.4	NA
Waste	9 679.73	5.1	62.9

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

36. For the energy sector, information was clearly reported on the tier level used (tier 1), AD sources, sources of EFs (national EFs for natural gas and default EFs for other fuels), and key categories, of which the most significant is category 1.A.3.b road transport.

37. For the IPPU sector, information was clearly reported on the tier level used (tier 1, except tier 2 for cement production), AD sources, sources of EFs (national EFs for cement production and default EFs for other categories), key categories (one key category was identified for the IPPU sector, namely category 2.A.1 cement production), notation keys used and other information specific to the sector.

38. Information on the solvent and other product use sector was not reported. The Party clarified in its BUR that such information was not available.

39. For the agriculture sector, N₂O from agricultural soils and CH₄ from enteric fermentation were identified as key categories and the most significant emissions sources in the sector. Peru used default EFs from the Revised 1996 IPCC Guidelines and the IPCC good practice guidance.

40. For the LULUCF sector, Peru reported annual GHG emissions and removals for 2014. Total net emissions from the LULUCF sector were 75,345.47 Gg CO₂ eq, taking into account LULUCF removals totalling 25,350.74 Gg CO₂ eq.

41. For the waste sector, information was clearly reported on the tier level used (tier 1), AD sources, EFs (default EFs from the Revised 1996 IPCC Guidelines and national EFs), key categories (the most significant being category 6.A.2 managed waste disposal sites), notation keys used and other information specific to the sector.

42. The BUR provides an update to some of the GHG inventories reported in the previous BUR, which addressed anthropogenic emissions and removals for 2010. The update was carried out for 2000, 2005 and 2010 using methodologies contained in the Revised 1996 IPCC Guidelines, the 2006 IPCC Guidelines, the IPCC good practice guidance and the IPCC

good practice guidance for LULUCF. For LULUCF, the update was only carried out for 2012 and 2014 owing to a lack of information available at the time. Peru reported that it is in the process of completing new land-use change maps and new land-use maps that will cover all previous inventory years and that should be available when preparing the 2016 inventory.

43. Peru described in its BUR the institutional framework for the preparation of its 2014 GHG inventory. The Party reported that the Ministry of Environment is the governmental body responsible for its climate change policy and its GHG inventory, which was prepared with the support of UNDP by assisting Peru in designing its MRV system. The Party identified improvements in the institutional set-up, such as the establishment of a formal coordination framework that clearly designates responsibilities for preparing the GHG inventory and the BUR.

44. Peru clearly reported that a key category analysis was performed using the 2006 IPCC Guidelines for the level of emissions and the trend in emissions for the 2014 inventory. The most significant category in terms of level of total emissions is land converted to agricultural land (19.4 per cent of total emissions in 2014). In terms of the trend (2012–2014) in total emissions the most significant category is not clearly reported in the BUR, with different information reported in the text of chapter 3.3.3 and in table 3.7.

45. The BUR provides information on QA/QC measures for all sectors. The information reported includes details on the QA procedures, such as cross-checking the AD, EFs and calculations for the subcategories in each sector, and the QC methods used, namely those provided in the 2006 IPCC Guidelines for the energy and IPPU sectors, the IPCC good practice guidance for the agriculture and waste sectors, and the IPCC good practice guidance for LULUCF for the LULUCF sector.

46. Information on CO₂ emissions from fuel combustion using the reference approach was not reported in the BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party provided a report with the full results using the reference approach, including a comparison of estimates using the sectoral approach and estimates using the reference approach. The Party clarified that this information had been overlooked during the preparation and consolidation of the BUR. The comparison reveals a 6.7 per cent difference between the emissions estimated using the reference approach (46,248.47 Gg CO₂) and those estimated using the sectoral approach (52,803.49 Gg CO₂). Peru indicated possible reasons for this difference, which is greater than 5 per cent, including the lack of information on conversion factors used for measurement units (energy to volume) of the AD used in the sectoral approach, the inclusion of fugitive emissions in the calculation using the reference approach, the lack of data for the excluded carbon emissions when using the reference approach, and the software used for estimating emissions from the transport sector using the sectoral approach.

47. Information was clearly reported on international aviation and marine bunker fuels, which is an improvement compared with the previous BUR.

48. Peru reported information on the uncertainty assessment of its national GHG inventory. The uncertainty analysis was based on the tier 1 approach described in the IPCC good practice guidance and IPCC good practice guidance for LULUCF and covers all source categories and all direct GHGs. The results obtained, as reported in the BUR, reveal that the level uncertainty for emissions is 36.6 per cent and the trend uncertainty is 13.6 per cent.

49. 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 and 46 above, which could facilitate a better understanding of the information reported on GHG inventories.

50. In paragraphs 36 and 38 of the summary report on the technical analysis of the Party's first BUR, the previous TTE noted areas where the transparency of the reporting on GHG inventories could be enhanced, namely by providing disaggregated data for emissions from domestic and international aviation and marine fuels and providing a table with the notation keys used. The current TTE noted the improvements referred to in paragraphs 32 and 47 above and commends the Party for enhancing the transparency of its reporting.

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

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

52. The information reported provides a comprehensive overview of the Party's mitigation actions and their effects. In its BUR, Peru reported that a national framework was established in 2015 for the design and implementation of mitigation measures aimed at meeting the Party's commitment under the Paris Agreement to reduce national GHG emissions by 30 per cent by 2030 compared with the baseline level. Within this framework, sectoral NAMAs are the main mitigation tool, although most are still being developed. Peru reported 14 NAMAs grouped by sector: 4 in the energy sector, 2 in the transport sector, 3 in the industrial processes sector, 4 in the agriculture sector and 1 in the waste sector. As at December 2016 (the end of the reporting period), 10 of these NAMAs were in the design stage, 3 had been fully developed and funding was being sought for their implementation, and the NAMA in the solid waste sector was the only one being implemented. Other notable mitigation activities during 2015–2016 include the development of the National Climate Change Strategy (2015) and the National Strategy on Forests and Climate Change, and progress in the implementation of the Forests Investment Programme and REDD+ projects. As a result of the Government's efforts to formulate the Party's first NDC, the Ministry of Environment has consolidated technical and political leadership in climate change matters, thus increasing awareness of climate change matters among different groups in Peruvian society and expanding the number of climate stakeholders.

53. For some of its mitigation activities Peru reported a range of expected annual GHG emissions reductions (labelled as optimist and conservative scenarios), for others it presented a single figure of expected annual emissions at a fixed year (2030) and for others it did not present any numerical estimations.

54. The Party reported a summary of its mitigation actions in tabular format (table 4.1 of the BUR) in accordance with decision 2/CP.17, annex III, paragraph 11. In addition, for each mitigation action, the Party included detailed information in narrative format.

55. Information on mitigation actions and advances in NAMA development occurring after December 2016 was not reported in the BUR. However, during the technical analysis, the Party informed the TTE that data on mitigation actions for 2017–2019 will be included in the Party's third BUR, which is scheduled to be completed by the end of 2020. The third BUR will describe Peru's new, more thorough approach to identifying and implementing mitigation measures, which more effectively supports the fulfilment of its NDC.

56. Consistently with decision 2/CP.17, annex III, paragraph 12(a), Peru clearly reported the names of 14 mitigation actions and their coverage (sector and gases) in table 4.1 of the BUR. A clear description was provided for all mitigation actions, and information on quantitative goals and progress indicators was provided for 11 of the 14 mitigation actions reported. Additional estimates of the funding needed was included for four mitigation actions.

57. Information on quantitative goals and progress indicators was not reported for three of the four mitigation actions presented under the agriculture sector, which were the NAMAs that involve implementing better cultivation practices for cacao, oil palm and coffee crops. During the technical analysis, the Party clarified that quantitative goals and progress indicators had not been formulated for all NAMAs by the deadline for submission of the BUR.

58. Peru clearly reported information on methodologies for all three NAMAs in the industrial sector, the NAMA in the waste sector, all four NAMAs in the agriculture sector and one of the two NAMAs in the transport sector, and reported on assumptions made for all three NAMAs in the industrial sector, the NAMA in the waste sector, the NAMA in the stationary energy sector and one of the two NAMAs in the transport sector. The objectives of all mitigation actions were described. Steps taken or envisaged were included for all mitigation actions except three in the agriculture sector.

59. The four energy-related NAMAs reported involve introducing renewable energy, both grid connected and off-grid, and increasing the energy efficiency and sustainability of buildings, primarily through the development of policy frameworks that facilitate the implementation of mitigation measures in these areas. The NAMA aimed at increasing renewable energy connected to the grid is the main expected source of emission reductions, estimated at 7,600 Gg CO₂ eq per year and an accumulated 44,100 Gg CO₂ eq by 2030. This NAMA considers an increase in the participation of these energy sources in the future electricity mix by promoting regulatory changes aimed at developing more competitive market conditions for these types of projects in Peru. The Party reported on the objectives of the actions and steps taken or envisaged to achieve those actions and estimated outcomes for all mitigation actions in the energy sector.

60. Information on methodologies was not reported for the energy-related NAMAs and information on assumptions was not reported for three out of four energy-related NAMAs. Information on the progress and the underlying steps taken or envisaged was not reported for the four stationary energy-related NAMAs.

61. One of the two NAMAs in the transport sector, fostering conditions for electromobility in the country, has an approach similar to a NAMA in the energy sector, while the other NAMA consists of a large-scale urban transport project covering the municipalities of Lima and Callao. Peru reported on the objectives of the actions and steps taken or envisaged to achieve those actions and estimated outcomes for all mitigation actions in the transport sector. The Party also reported the co-benefits of its mitigation actions in the transport sector, including health benefits, a reduction in travel time, a decrease in traffic accidents and an increased formalization of the currently largely informal urban transport system.

62. Information on methodologies and on assumptions was not reported for the NAMA related to electric transport.

63. Peru's NAMAs related to the industrial processes sector cover two heavy industrial subsectors (steel and cement) and a subsector with artisanal practices (brick production). Peru reported information on methodologies, assumptions, objectives and steps taken or envisaged to achieve the action and estimated outcomes for all mitigation actions in the industrial processes sector.

64. Peru identified four NAMAs related to the agriculture sector. Three of these involve implementing better cultivation practices for cacao, oil palm and coffee crops; one action relates to livestock management. Peru reported information on the objectives of all the actions in the agriculture sector.

65. Information on assumptions used and results achieved, such as estimated outcomes, was not reported for the four NAMAs in the agriculture sector. Steps taken or envisaged to achieve the actions were not reported in three of the four NAMAs in the agriculture sector.

66. Peru reported one NAMA in the waste sector, corresponding to a programme supporting a range of mitigation actions oriented towards minimizing the generation of solid waste in the whole country through the creation of economic incentives to increase the value of the residues.

67. Peru did not report on the progress of its implementation of its only NAMA in the waste sector, despite the fact that it is the only NAMA reported as under implementation.

68. During the technical analysis, Peru clarified that most of the NAMAs reported were still being developed, including establishing the appropriate methodologies, assumptions and steps envisaged, at the time of the preparation of the BUR. This is the main reason that the reporting provisions outlined in decision 2/CP.17, annex III, paragraph 12(b–d), were only partially met. Peru informed the TTE that a multisectoral working group convened in December 2018 to generate technical information aimed at fulfilling Peru's NDC completed a thorough assessment of the 62 mitigation actions identified to meet the Party's mitigation commitments related to the NDC. Currently the Party is pursuing these mitigation measures in addition to the 14 NAMAs originally identified. During the technical analysis, Peru explained that in its next BUR it will include an analysis of capacity-building measures related to this larger number of mitigation actions.

69. Peru provided information on its involvement in international market mechanisms as a Party to the Kyoto Protocol. Peru documented 66 CDM projects under the UNFCCC CDM process; and 2015 was the last year in which a CDM project was registered in Peru. Most of these projects (53) relate to renewable energy. A total of 4,502,342 certified emission reductions have been issued in connection with the Party's portfolio of CDM projects. The Party also provided information on its involvement in other market mechanisms: Verified Carbon Standard (20 projects), Gold Standard (6 projects) and VER+ Standard (3 projects). Most of these projects (16) are in the LULUCF sector.

70. Peru reported information on its domestic MRV arrangements in accordance with decision 2/CP.17, annex III, paragraph 13. The information reported indicates that Peru is in the process of developing and designing a domestic MRV system for mitigation actions in line with the objectives of the National Climate Change Strategy. The main MRV tools are INFOCARBONO, the forthcoming national registry of mitigation measures, including the current national registry of REDD+ projects, and Carbon Footprint Peru, a new Government-run online platform that recognizes the mitigation activities of private companies and government organizations.

71. The TTE noted that the transparency of the information reported on mitigation actions could be further enhanced by addressing the areas noted in paragraphs 57, 60, 62, 65 and 67 above, which could facilitate a better understanding of the information reported on mitigation actions.

72. In paragraphs 44–47 of the summary report on the technical analysis of Peru's first BUR, the previous TTE noted areas where the transparency of the reporting on mitigation actions could be further enhanced. These related to the description of mitigation actions, coverage, quantitative goals and progress indicators, methodologies and assumptions, steps taken or envisaged, and the progress of implementation and estimated outcomes. The current TTE noted the information referred to in paragraphs 56, 58, 59, 61 and 63 above constitutes an improvement to the first BUR and commends the Party for enhancing the transparency of its reporting.

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, Peru 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. Peru 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, Peru reported that some gaps had been identified, including lack of funding to carry out a study to quantify the costs for implementing NAMAs, and it proposed short-term needs related to those gaps. The needs relate to three major areas: preparing national GHG inventories, managing GHG emission reduction and preparing BURs.

75. Information on constraints and gaps identified was not clearly reported in Peru's second BUR. However, during the technical analysis, the Party clarified that it encountered a challenge in reporting information on constraints and gaps due to lack of information at the time the analysis was completed (December 2016). The objective at that time was to present aggregated information on the main needs and the support required in the short term. In line with efforts to implement the NDC, the Government has since defined the specific constraints and gaps through the multisectoral working group on the implementation of the NDC. As this information was not available until December 2018, it will be included in the third BUR.

76. Peru reported information on financial resources, technology transfer, capacity-building and technical support received in accordance with decision 2/CP.17, annex III, paragraph 15. Peru reported that it received USD 58,104.89 from the GEF to prepare its second BUR. As reported in table 5.2 of the BUR, additional financial resources were provided for the BUR process from Parties included in Annex II to the Convention and other developed country Parties; the total amount received was USD 134,560.19. Table 5.3 of the BUR presents a complete list of 64 projects, specifying in each case whether the support received constitutes financial resources, technology transfer and/or capacity-building.

Regarding the technology support received, Peru reported in table 5.3 that it received technology transfer support in seven projects, including a wood kitchen replacement programme, the introduction of a solar electricity generation system and the transformation of its domestic lighting market.

77. Peru did not report 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. During the technical analysis, Peru clarified that the Government had identified mitigation measures related to the NDC in December 2018, providing more information on technology needs. However, as the reporting period of the second BUR ended in December 2016, this information was not included therein, but will be included in the third BUR.

78. The TTE noted that the transparency of the information reported on needs and support received could be further enhanced by addressing the areas noted in paragraphs 70 and 72 above, which could facilitate a better understanding of the information reported on needs and support received.

79. In paragraphs 51 and 53 of the summary report on the technical analysis of Peru's first BUR, the previous TTE noted areas where the transparency of the reporting on constraints and gaps, and related technology, financial, technical and capacity-building needs, including a description of support needed and received, could be further enhanced. During the technical analysis, the Party noted that these areas for increasing transparency remain areas of capacity-building needs.

5. Any other information

80. Peru reported some information on adaptation actions that may lead to GHG emission reductions, without providing estimations of such reductions. During the technical analysis, Peru clarified that no efforts had previously been made to quantify the mitigation effects of the adaptation measures because they were implemented via programmes developed with the intention of enhancing adaptive capacity. Peru is establishing a process for quantifying on an ongoing basis the emission impacts of such measures.

D. Identification of capacity-building needs

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

(a) Strengthening the national capacity to prepare the GHG inventory for the purposes of the BUR, in particular the capacity to prepare and use higher-tier EFs, preparing time series of GHG emissions, and collecting AD for missing categories and subcategories and gases;

(b) Enhancing use of the 2006 IPCC Guidelines, including reporting all LULUCF sources and sinks in line therewith;

(c) Increasing institutional capacity to attract financing to ensure continuous operation of INFOCARBONO and preparation of regular reporting (e.g. BURs, GHG inventories);

(d) Improving planning of the QA/QC timeline for the GHG inventory in order to prevent any part of the process from delaying the final submission of the BUR, thus ensuring compliance with the UNFCCC reporting guidelines on BURs;

(e) Improving the national capacity to include additional information on anthropogenic emissions by sources of HFCs, PFCs, SF₆, CO, NO_x, NMVOCs and SO_x;

(f) Enhancing the capacity of the entities reporting to the national registry of mitigation measures, for improved provision of data and information, the development of locally appropriate methodologies and indicators, and the design and implementation of related verification protocols;

(g) Increasing institutional capacity to enhance collaboration between the Government and the private sector with a view to implementing the mitigation actions needed to fulfil the Party's NDC, including defining a road map and action plan;

(h) Developing and implementing domestic MRV systems for mitigation policies and measures, including NAMAs, at the sectoral level;

(i) Developing and estimating baseline scenarios and projections for domestic GHG emissions for sectoral mitigation policies and measures, which will also help promote low-carbon development in the country in the long term;

(j) Identifying, applying and reporting on methodologies for estimating mitigation impacts in the country, and interpreting the results achieved in specific sectors;

(k) Improving the quantification and reporting of constraints and gaps;

(l) Enhancing the capacity to identify technology needs, especially by consulting with the private sector;

(m) Enhancing the capacity to estimate and identify sources of financial support that will facilitate implementation of mitigation actions and improved reporting in subsequent BURs.

82. The TTE noted that, in addition to those identified during the technical analysis, Peru reported the following capacity-building needs in its BUR:

(a) Strengthening the capacity of government officials working on INFOCARBONO to use methodologies for GHG inventory preparation;

(b) Implementing the national registry of GHG emissions;

(c) Enhancing the technical capacity of the multisectoral working group on the implementation of the NDC;

(d) Strengthening institutional capacity to develop methodologies for monitoring and quantifying the public budget for climate change management.

83. In paragraphs 56 and 58 of the summary report on the technical analysis of Peru's first BUR, the previous TTE, in consultation with Peru, identified capacity-building needs, some of which have not yet been addressed.

III. Conclusions

84. The TTE conducted a technical analysis of the information reported in the second BUR of Peru in accordance with the UNFCCC reporting guidelines on BURs and concludes that the information reported is mostly 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 removal by sinks of all GHGs not controlled by the Montreal Protocol, including an NIR; 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 (except for technology needs); the level of support received to enable the preparation and submission of BURs; and domestic MRV processes. During the technical analysis, additional information was provided by Peru on GHG emission results for the energy sector and fugitive emissions, and the newly defined mitigation actions included in a report from the multisectoral working group on the implementation of the NDC. The TTE concluded that the information analysed is mostly transparent.

85. Peru reported an update on the institutional arrangements relevant to the preparation of its BURs. The updated information included key aspects of the institutional arrangements that allow for the sustainable preparation of its BURs. These include enhanced institutionalization of the reporting process and the building of national capacity. Arrangements for the preparation of a domestic MRV system were also described.

86. In its second BUR, submitted in 2019, Peru reported information on its national GHG inventory for 2014. This included GHG emissions and removals of CO₂, CH₄ and N₂O for all relevant sources and sinks. The inventory was developed on the basis of the 2006 IPCC Guidelines, although the IPCC good practice guidance, the IPCC good practice guidance for LULUCF and the Revised 1996 IPCC Guidelines were applied for some sectors and individual key categories. The total GHG emissions for 2014 were reported as 92,284.30 Gg CO₂ eq (excluding LULUCF) and 167,629.76 Gg CO₂ eq (including LULUCF). The key category identified was land converted to agricultural land for the level of emissions, while information relating to trend was not clearly reported. Estimates of fluorinated gases were not provided owing to difficulties in obtaining the necessary data. In addition, the CO₂ emission estimates calculated using the reference approach were not included in the BUR, and the precursor gases were not a focus of the Party at the time the BUR was prepared, as clarified by the Party in the BUR and during the technical analysis.

87. Peru reported information on mitigation actions and their effects in both tabular and narrative format, in line with the national framework established in 2015 for the design and implementation of mitigation measures to meet the Party's commitments under the Paris Agreement. Peru reported actions, articulated as NAMAs, that are planned in the waste, energy, transport, industrial processes and agriculture sectors. The mitigation actions focus on the establishment of legislative frameworks that facilitate the swift introduction of low-carbon technologies and practices at the sectoral level, and the active involvement of the private sector in mitigation actions. The Party did not report the progress of implementation of its mitigation actions and the results achieved, since most of the NAMAs were in the design stage at the end of the reporting period of the second BUR (December 2016).

88. The highest estimated outcome was reported for an action in the energy sector (grid-connected renewable energy), with reductions estimated at 7,600 Gg CO₂ eq per year and totalling 44,100 Gg CO₂ eq by 2030. The Party also reported the co-benefits of two NAMAs in the transport sector, including health benefits, reductions in travel time, decreases in traffic accidents and an increased formalization of the currently largely informal urban transport system. If all of the mitigation actions reported as NAMAs in the BUR are implemented, the minimum annual GHG emission reduction is expected to be 10,254 Gg CO₂ eq by 2030, whereas under a more optimistic scenario the annual GHG emission reduction could be 21,954 Gg CO₂ eq by 2030, resulting in accumulated reductions of 93,720 Gg CO₂ eq by 2030. Peru also reported information on its domestic international market mechanisms and MRV arrangements.

89. Peru reported information on key constraints, gaps and related needs in three major areas: preparing national GHG inventories, managing GHG emission reduction and preparing BURs. Information was reported on the technology transfer and capacity-building support received. The Party also reported that it received financial support of USD 58,104.89 from the GEF for preparing its latest BUR. The Party received USD 134,560.19 in total for the BUR process. The information provided on constraints and gaps and the needs addressed was not clearly reported. There was also a lack of information on nationally determined technology needs and the degree to which the support received addresses the country's nationally determined technology needs. As clarified by the Party during the technical analysis, the identification of technology needs is one of the areas included in the national analysis of the implementation of mitigation measures completed after the reporting period covered in the BUR.

90. The TTE, in consultation with Peru, identified the 13 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. Peru prioritized all the capacity-building needs identified in chapter II.D above.

Annex I

Extent of the information reported by Peru in its second biennial update report

Table I.1

Identification of the extent to which the elements of information on greenhouse gases are included in the second biennial update report of Peru

<i>Decision</i>	<i>Provision of the reporting guidelines</i>	<i>Yes/partly/no/NA</i>	<i>Comments on the extent of the information provided</i>
Decision 2/CP.17, paragraph 41(g)	The first BUR shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, or more recent years if information is available, and subsequent BURs shall cover a calendar year that does not precede the submission date by more than four years.	No	Peru submitted its second BUR in December 2019; the GHG inventories reported are for 2000, 2005, 2010, 2012 and 2014.
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	Peru used a combination of the Revised 1996 IPCC Guidelines, the 2006 IPCC Guidelines and the good practice guidance for LULUCF.
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	The Party submitted information for 2014, as well as for 2000, 2005, 2010 and 2012, using different tiers and guidelines. Peru reported in its BUR that, for the LULUCF sector, data for 2000, 2005 and 2010 will be updated and included in its next report.
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;	Yes	Comparable information was reported in table 7 of the annex.
	(b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines.	Yes	The Party included the requested information for the agriculture and waste sectors; comparable information was reported for the other sectors.
Decision 2/CP.17, annex III, paragraph 7	Each non-Annex I Party is encouraged to provide a consistent time series back to the years reported in its previous NCs.	Partly	The time series reported in the BUR did not include 1994 or updates to LULUCF estimates for 2000, 2005 and 2010.
Decision 2/CP.17, annex III, paragraph 8	Non-Annex I Parties that have previously reported on their national GHG inventories contained in their NCs are encouraged to submit summary information tables of inventories for previous submission years (e.g. for 1994 and 2000).	Partly	This information was not reported for 1994 and did not include updates to LULUCF estimates for 2000, 2005 and 2010.
	The inventory section of the BUR should consist of an NIR as a summary or as an update of the information contained in decision 17/CP.8,	Yes	

<i>Decision</i>	<i>Provision of the reporting guidelines</i>	<i>Yes/partly/no/NA</i>	<i>Comments on the extent of the information provided</i>
Decision 2/CP.17, annex III, paragraph 9	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 ₆).	Yes 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 an NIR as an annex to its 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.	Yes	Information on institutional arrangements was reported on page 68 of the BUR.
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 ; (b) CH ₄ ; (c) N ₂ O.	 Yes Yes Yes	The Party presented the required information in table 3.5 of the BUR.
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 ₆ .	No No No 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; (b) NO _x ; (c) NMVOCs.	 No No 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	
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	No	The information was reported only for the sectoral approach.

<i>Decision</i>	<i>Provision of the reporting guidelines</i>	<i>Yes/partly/no/NA</i>	<i>Comments on the extent of the information provided</i>
	and to explain any large differences between the two approaches.		
Decision 17/CP.8, annex, paragraph 19	Non-Annex I Parties should, to the extent possible, and if disaggregated data are available, report emissions from international aviation and marine bunker fuels separately in their inventories:		
	(a) International aviation;	Yes	
	(b) Marine bunker fuels.	Yes	
Decision 17/CP.8, annex, paragraph 20	Non-Annex I Parties wishing to report on aggregated GHG emissions and removals expressed in CO ₂ eq should use the global warming potential provided by the IPCC in its Second Assessment Report based on the effects of GHGs over a 100-year time-horizon.	Yes	
Decision 17/CP.8, annex, paragraph 21	Non-Annex I Parties are encouraged to provide information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol, including a brief explanation of the sources of EFs and AD. If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe the source and/or sink categories, methodologies, EFs and AD used in their estimation of emissions, as appropriate. Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building:		
	(a) Information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol;	Yes	Tier 1 methodology was used for almost all sectors.
	(b) Explanation of the sources of EFs;	Yes	
	(c) Explanation of the sources of AD;	Yes	
	(d) If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe:	NA	
	(i) Source and/or sink categories;		
	(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, but not for solvent and other product use or for non-CO ₂ gases associated with forest disturbances, such as forest fires.

<i>Decision</i>	<i>Provision of the reporting guidelines</i>	<i>Yes/partly/no/NA</i>	<i>Comments on the extent of the information provided</i>
	Where numerical data are not provided, Parties should use the notation keys as indicated.		
Decision 17/CP.8, annex, paragraph 24	Non-Annex I Parties are encouraged to provide information on the level of uncertainty associated with inventory data and their underlying assumptions, and to describe the methodologies used, if any, for estimating these uncertainties:		
	(a) Level of uncertainty associated with inventory data;	Yes	
	(b) Underlying assumptions;	Yes	
	(c) Methodologies used, if any, for estimating these uncertainties.	Yes	Method 1 from the IPCC good practice guidance and the IPCC good practice guidance for LULUCF was used.

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 second biennial update report of Peru

<i>Decision</i>	<i>Provision of the reporting guidelines</i>	<i>Yes/partly/no</i>	<i>Comments on the extent of the information provided</i>
Decision 2/CP.17, annex III, paragraph 11	Non-Annex I Parties should provide information, in tabular format, on actions to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol.	Yes	
Decision 2/CP.17, annex III, paragraph 12	For each mitigation action or group of mitigation actions, including, as appropriate, those listed in document FCCC/AWGLCA/2011/INF.1, developing country Parties shall provide the following information, to the extent possible:		
	(a) Name and description of the mitigation action, including information on the nature of the action, coverage (i.e. sectors and gases), quantitative goals and progress indicators;	Partly	Name and description of the mitigation actions reported are provided in table 4.1 in section 4 of the BUR. Quantitative information and a description of each action is provided in narrative form. Information on quantitative goals and progress indicators was not reported for some of the mitigation actions in the agriculture sector.
	(b) Information on:		
	(i) Methodologies;	Partly	
	(ii) Assumptions;	Partly	Information on methodologies and assumptions was not reported for most of the mitigation actions across sectors. Some actions include a reference to IPCC

<i>Decision</i>	<i>Provision of the reporting guidelines</i>	<i>Yes/partly/no</i>	<i>Comments on the extent of the information provided</i>
			methodologies which is not explained.
	(c) Information on:		
	(i) Objectives of the action;	Yes	
	(ii) Steps taken or envisaged to achieve that action;	Partly	Information on steps taken or envisaged for some of the mitigation actions in the agriculture sector was not reported.
	(d) Information on:		
	(i) Progress of implementation of the mitigation actions;	Partly	Peru reported mitigation actions that are mostly in the design stage (planned). One action is reported as being implemented (ongoing) but the associated outcomes were not described.
	(ii) Progress of implementation of the underlying steps taken or envisaged;	Yes	Progress up to December 2016 was reported. At that time no information was available on the progress of implementation of the underlying steps taken or envisaged.
	(iii) Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible;	No	
	(e) Information on international market mechanisms.	Yes	
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 second biennial update report of Peru

<i>Decision</i>	<i>Provision of the reporting requirements</i>	<i>Yes/partly/no</i>	<i>Comments on the extent of the information provided</i>
Decision 2/CP.17, annex III, paragraph 14	Non-Annex I Parties should provide updated information on:		
	(a) Constraints and gaps;	Yes	
	(b) Related financial, technical and capacity-building needs.	Yes	
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 Global Environment Facility, Parties included in Annex II to the Convention and other developed country Parties, the Green Climate Fund and multilateral institutions for	Yes	

<i>Decision</i>	<i>Provision of the reporting requirements</i>	<i>Yes/partly/no</i>	<i>Comments on the extent of the information provided</i>
	activities relating to climate change, including for the preparation of the current BUR.		
Decision 2/CP.17, annex III, paragraph 16	With regard to the development and transfer of technology, non-Annex I Parties should provide information on:		
	(a) Nationally determined technology needs;	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

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/gp/lulucf/gp_lulucf.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 and second BUR of Peru. Available at <https://unfccc.int/BURs>.

NC3 of Peru. Available at <https://unfccc.int/non-annex-I-NCs>.

Summary report on the technical analysis of the first BUR of Peru. Available at <https://unfccc.int/ICA-cycle1>.

C. Information provided by the Party

The following documents¹ were provided by the Party in response to requests for technical clarification during the technical analysis:

Reporte anual de gases de efecto invernadero - 2014. Sector energía. Combustión estacionaria y emisiones fugitivas. Diciembre 2016.

¹ Reproduced as received from the Party.