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Report on the technical expert review of the first biennial transparency report of Peru*

Summary

This report presents the results of the technical expert review of the first biennial transparency report of Peru, conducted by a technical expert review team in accordance with the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement, and capacity-building needs identified by the Party and by the technical expert review team in consultation with the Party during the review. The review took place from 16 to 20 March 2026 in Lima.

* In the symbol for this document, 2024 refers to the year in which the biennial transparency report was submitted, not to the year of publication.



Abbreviations and acronyms

2006 IPCC Guidelines	<i>2006 IPCC Guidelines for National Greenhouse Gas Inventories</i>
A6.4ER	emission reduction under Article 6, paragraph 4, of the Paris Agreement
AD	activity data
BTR	biennial transparency report
CER	certified emission reduction
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
CRT	common reporting table
CTF	common tabular format
EF	emission factor
GHG	greenhouse gas
HFC	hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
ITMO	internationally transferred mitigation outcome
LULUCF	land use, land-use change and forestry
MINAM	Ministry of Environment of Peru
MPGs	modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement
N ₂ O	nitrous oxide
NA	not applicable
NAP	national adaptation plan
NDC	nationally determined contribution
NE	not estimated
NID	national inventory document
NIR	national inventory report
PaMs	policies and measures
QA/QC	quality assurance/quality control
SDG	Sustainable Development Goal
SF ₆	sulfur hexafluoride
TERT	technical expert review team

I. Introduction and summary

A. Introduction

1. This report covers the technical expert review of the BTR1 of Peru. The review was organized by the secretariat and conducted by the TERT in accordance with the MPGs,¹ particularly chapter VII thereof. Peru, on a voluntary basis, requested the secretariat to organize a review of the information reported in the BTR1 pursuant to chapter IV of the MPGs as part of the technical expert review.² The outcome of the voluntary review is presented in annex I.

2. A draft version of this report was transmitted on 29 July 2026 to the Government of Peru, which provided comments on 15 and 23 September 2026 that were taken into account, as appropriate, in this final version of the report.³

3. The review was conducted as an in-country review from 16 to 20 March 2026 in Lima by the following team of nominated experts from the UNFCCC roster of experts: Roberto Acosta Moreno (Cuba), Ijaz Ahmad (Pakistan), Laura Dawidowski (Argentina), Alejandra Guevara (Honduras), Guadalupe Martinez (Uruguay), Leonardo Massai (Democratic Republic of the Congo), Esther Mertens (Belgium) and Juan José Rincón Cristóbal (Spain). Laura Dawidowski and Juan José Rincón Cristóbal were the lead reviewers. The review was coordinated by Javier Hanna Figueroa (secretariat).

B. Scope

4. The TERT conducted a technical expert review of the information reported in the BTR1 of Peru as per the scope of the review defined in paragraph 146 of the MPGs and decision 9/CMA.4, consisting of:

(a) Review of the consistency of the information submitted by the Party under Article 13, paragraphs 7 and 9, of the Paris Agreement with the MPGs taking into account the flexibility accorded to the Party under Article 13, paragraph 2, of the Paris Agreement (see chap. II.A below);

(b) Consideration of the Party's implementation and achievement of its NDC under Article 4 of the Paris Agreement (see chap. II.B below);

(c) Identification of areas of improvement⁴ for the Party related to implementation of Article 13 of the Paris Agreement (see chap. II.D below);

(d) Assistance in identifying capacity-building needs (see chap. II.E below);

(e) Voluntary review of the information reported by the Party pursuant to chapter IV of the MPGs (see annex I).

C. Summary

5. Peru submitted its BTR1 on 31 December 2024, on the deadline mandated in decision 18/CMA.1. Peru submitted its NID as a stand-alone document on 31 December 2024, on the deadline. Peru submitted its CRTs on 30 September 2025, after the deadline, and CTF NDC tables on 31 December 2024, on the deadline.⁵ The TERT noted the delay in the submission of the CRTs.

¹ Decision 18/CMA.1, annex.

² See decision 9/CMA.4, para. 1.

³ As per para. 162(e) of the MPGs.

⁴ As referred to in paras. 7, 8, 146(d) and 162(d) of the MPGs.

⁵ The technical expert review was conducted on the basis of the revised versions of the BTR1 and NID submitted on 7 January 2025 and 29 January 2025 respectively.

6. A list of the areas of improvement identified on the basis of the review of the consistency of the reported information with the MPGs can be found in the assessment tables.⁶

7. The Party applied flexibility as provided for those developing country Parties that need it in the light of their capacities pursuant to Article 13, paragraph 2, of the Paris Agreement in relation to the NIR of anthropogenic GHG emissions by sources and removals by sinks⁷ and the information necessary to track progress in implementing and achieving its NDC.⁸ Information on where the flexibility was applied is included in chapters II.A.1–II.A.2 below.

D. Information provided by the Party pursuant to paragraphs 143–145 of the modalities, procedures and guidelines

8. Peru reported information on support needed and received for implementing Article 13 of the Paris Agreement and transparency-related activities, including for transparency-related capacity-building. The Party reported on support needed and received for preparing reports pursuant to Article 13 of the Paris Agreement. Support is needed primarily for improving the quality of information provided in future BTRs, covering both climate action in terms of mitigation and adaptation, and support for enhancing knowledge management across institutions related to preparing BTRs; applying higher-tier methods for key categories in the GHG inventory; enhancing the energy statistical framework; applying enhanced characterization of livestock; improving the national forest inventory; reporting a complete time series of emission and removal estimates for land use and land-use change; collecting, processing and analysing AD for the waste sector; estimating GHG emission reductions achieved by PaMs; collecting information on costs and non-GHG mitigation benefits of PaMs; assessing longer-term trends in GHG emissions; and developing and maintaining a system for reporting GHG projections. In contrast, support has been received for simulating a technical analysis of Peru's third biennial update report, developing a road map for Peru's BTR1, analysing the provisions of the MPGs for NIRs and the support required and received, and preparing the BTR1. A complete list of the support needs reported by the Party is included in section 4.9 of the BTR (pp.122–123). The TERT noted that the above-mentioned information reported by the Party is not subject to review as per the scope of the review defined in paragraph 146 of the MPGs.

II. Technical expert review⁹

A. Review of the consistency of the submitted information with the modalities, procedures and guidelines¹⁰

1. National inventory report¹¹

9. The TERT assessed the information reported in the BTR1 of Peru and identified areas of improvement relating to consistency with the MPGs, which are described in tables 2–7 of the assessment tables referred to in paragraph 6 above and summarized in table 1.

⁶ Contained in document FCCC/ETF/TERR.1/2024/PER/Add.1, available at <https://unfccc.int/first-biennial-transparency-reports>.

⁷ The developing country Party applied flexibility in the light of its capacities with respect to the provisions in paras. 48, 57 and 58 of the MPGs.

⁸ The developing country Party applied flexibility in the light of its capacities with respect to the provisions in paras. 85 and 92 of the MPGs.

⁹ As per para. 187 of the MPGs.

¹⁰ As per para. 146(a) of the MPGs.

¹¹ As per para. 150(a) of the MPGs.

Table 1

Information reported in Peru's national inventory report and review of consistency with the modalities, procedures and guidelines

<i>Element</i>	<i>Information to be reported</i>	<i>Response and summary as relevant</i>	<i>ID#(s) for the area(s) of improvement identified^a</i>
Submission type (para. 12 of the MPGs)	Has the NIR been submitted as a stand-alone document?	Yes	No areas of improvement relating to recommendations were identified
Time series (paras. 57–58 of the MPGs)	What years have been reported and is the time series in accordance with the MPGs? ^b	2000–2021, except for the LULUCF sector, for which 2010–2021 was reported	No areas of improvement relating to recommendations were identified
Metrics (para. 37 of the MPGs)	Has the Party used the 100-year global warming potential values from the Fifth Assessment Report of the IPCC?	Yes	No areas of improvement relating to recommendations were identified
	Has the Party used other metrics?	No	No areas of improvement relating to recommendations were identified
Gases (paras. 48–49 of the MPGs)	Which gases have been reported? ^b	CO ₂ , CH ₄ , N ₂ O, HFCs and SF ₆	4.I.3
Indirect emissions (para. 52 of the MPGs)	Has the Party reported indirect CO ₂ emissions and national totals with and without indirect CO ₂ ?	No	No areas of improvement relating to recommendations were identified
	Has the Party reported indirect N ₂ O emissions from sources other than those in the agriculture and LULUCF sectors as a memo item?	No	NA
National circumstances and institutional arrangements (paras. 18–19 of the MPGs)	Has the Party reported information on the functions related to inventory planning, preparation and management?	Yes	1.1, 2.G.2, 2.G.3
Methodologies, parameters and data (paras. 20–24 of the MPGs)	Has the Party used the 2006 IPCC Guidelines?	Yes	3.E.1, 4.I.1, 4.I.4, 5.A.1, 5.A.2, 5.A.5, 5.A.9, 5.A.11, 6.L.1, 7.W.1, 7.W.2, 7.W.3, 7.W.4, 7.W.5, 7.W.6, 7.W.12, 7.W.13, 7.W.15, 7.W.16, 7.W.20, 7.W.21
	Has the Party used other IPCC methodological guidance?	Yes, the 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands and the 2019	No areas of improvement relating to recommendations were identified

<i>Element</i>	<i>Information to be reported</i>	<i>Response and summary as relevant</i>	<i>ID#(s) for the area(s) of improvement identified^a</i>
		Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories	
Key category analysis (paras. 25, 41 and 42 of the MPGs)	Has the Party reported a key category analysis?	Partly, a key category analysis was performed using approach 1 and a 95 per cent threshold for level and trend assessment for the starting inventory year (2010) and the latest reporting year (2021) and with and without LULUCF	2.G.6
Time-series consistency and recalculations (paras. 26–28, 43 and 57 of the MPGs)	Has the Party reported a consistent time series?	Partly	3.E.3
	Has the Party reported recalculations and provided justification and explanatory information for them?	Yes, in relation to its third biennial update report under the Convention	No areas of improvement relating to recommendations were identified
Uncertainty assessment (paras. 29 and 44 of the MPGs)	Has the Party reported the results of the uncertainty analysis and the methods used, underlying assumptions and trends?	Partly, including level and trend uncertainty, reported using approach 1 for the latest reporting year (2021)	2.G.7
QA/QC plan and procedures (paras. 34–36 and 46 of the MPGs)	Has the Party elaborated information on an inventory QA/QC plan, including information on the inventory agency responsible for implementing QA/QC, and current and future QA/QC procedures?	Partly, including information on the inventory agency responsible for implementing QA/QC, an inventory QA/QC plan, general QC procedures and category-specific QC for key categories and for individual categories for which significant methodological changes and/or data revisions have occurred	2.G.5
Assessment of completeness (paras. 30–33, 45, 47 and 50 of the MPGs)	Have any areas of improvement for lack of completeness been identified for the following sectors?	Yes	2.G.4
	Energy	Yes	3.E.2, 3.E.3
	IPPU	Yes	4.I.1, 4.I.2, 4.I.3
	Agriculture	Yes	5.A.5, 5.A.9, 5.A.10, 5.A.11
	LULUCF	Yes	6.L.2, 6.L.3, 6.L.4, 6.L.5, 6.L.6
	Waste	Yes	7.W.1, 7.W.6, 7.W.9, 7.W.10, 7.W.11, 7.W.13, 7.W.19

<i>Element</i>	<i>Information to be reported</i>	<i>Response and summary as relevant</i>	<i>ID#(s) for the area(s) of improvement identified^a</i>
Threshold for reporting significant categories (para. 32 of the MPGs)	Are the estimated emissions for all categories and in total for all gases and categories reported insignificant below the relevant thresholds?	NA	No areas of improvement relating to recommendations were identified
	For categories reported as “NE” owing to insignificance, has information been reported showing that the likely level of emissions is below the threshold of significance?	NA	NA
Methodologies, EFs, parameters and AD (paras. 39, 40 and 53–56 of the MPGs)	Has information been transparently reported on categories, gases, methodologies (including the rationale for selecting them), EFs and AD at a disaggregated level for the following sectors?		
	Energy	Yes	No areas of improvement relating to recommendations were identified
	Has information been reported on international aviation and marine bunker fuel emissions as two separate entries and such emissions distinctly reported from national totals?	Yes	NA
	Has information been reported indicating how feedstocks and non-energy use of fuels have been accounted for in the inventory, under the energy or IPPU sector?	Partly	NA
	IPPU	Partly	4.I.1, 4.I.2, 4.I.3
	Agriculture	Partly	5.A.2, 5.A.3, 5.A.4, 5.A.6, 5.A.8, 5.A.11
	LULUCF	Yes	No areas of improvement relating to recommendations were identified

<i>Element</i>	<i>Information to be reported</i>	<i>Response and summary as relevant</i>	<i>ID#(s) for the area(s) of improvement identified^a</i>
	Did the Party provide supplementary information on the approach to reporting emissions and removals from harvested wood products in accordance with IPCC guidance other than the production approach, and provide supplementary information on emissions and removals from harvested wood products estimated using the production approach?	Yes	No areas of improvement relating to recommendations were identified
	Waste	Partly	7.W.4, 7.W.5, 7.W.6, 7.W.7, 7.W.8, 7.W.9, 7.W.12, 7.W.13, 7.W.14, 7.W.16, 7.W.17, 7.W.18, 7.W.21

^a See document FCCC/ETF/TERR.1/2024/PER/Add.1. The areas of improvement referred to in this table comprise only those relating to recommendations in that document.

^b The developing country Party applied flexibility in the light of its capacities with respect to this provision.

2. Information necessary to track progress in implementing and achieving the nationally determined contribution¹²

10. The TERT assessed the information reported in the BTR1 of Peru and identified areas of improvement relating to consistency with the MPGs, which are described in tables 8–11 and 13 of the assessment tables referred to in paragraph 6 above and summarized in table 2.

Table 2

Information reported in Peru's submission

<i>Topic</i>	<i>ID#(s) for the area(s) of improvement identified^a</i>
National circumstances and institutional arrangements (paras. 59–63 of the MPGs)	8.1, 8.2
Description of the NDC under Article 4 of the Paris Agreement, including updates (para. 64 of the MPGs)	9.1
Information necessary to track progress in implementing and achieving the NDC under Article 4 of the Paris Agreement (paras. 65–79 of the MPGs)	10.1
Mitigation PaMs, actions and plans related to implementing and achieving the NDC under Article 4 of the Paris Agreement ^b (paras. 80–90 of the MPGs)	11.1, 11.4
Summary of GHG emissions and removals (para. 91 of the MPGs)	No areas of improvement relating to recommendations were identified
Projections of GHG emissions and removals ^b (paras. 92–102 of the MPGs)	No areas of improvement relating to recommendations were identified

^a See document FCCC/ETF/TERR.1/2024/PER/Add.1. The areas of improvement referred to in this table comprise only those relating to recommendations in that document.

^b The developing country Party applied flexibility in the light of its capacities with respect to this provision.

3. Financial, technology development and transfer, and capacity-building support provided¹³

11. Peru does not consider itself subject to the reporting obligations applicable to developed country Parties pursuant to Article 13, paragraph 9, of the Paris Agreement. Accordingly, the Party did not provide information on financial, technology development and transfer, or capacity-building support provided to developing country Parties under Articles 9–11 of the Paris Agreement in its BTR1.¹⁴

B. Consideration of the Party's implementation and achievement of its nationally determined contribution¹⁵

12. In considering Peru's progress in implementing and achieving its NDC, the TERT noted that the NDC¹⁶ is defined as an absolute economy-wide unconditional target of not exceeding net GHG emissions of 208.8 Mt CO₂ eq in 2030. This target applies to the entire national territory, covering the energy, IPPU, agriculture, LULUCF and waste sectors and all sources of emissions and removals by sinks of CO₂, CH₄, N₂O, HFCs, perfluorocarbons and SF₆. The implementation period of the NDC is from 1 January 2021 to 31 December 2030. In addition, the NDC includes an absolute economy-wide conditional target of not exceeding

¹² As per para. 150(b) of the MPGs.

¹³ As per para. 150(c) of the MPGs.

¹⁴ As per para. 118 of the MPGs.

¹⁵ As per para. 146(b) of the MPGs.

¹⁶ The consideration of the Party's implementation and achievement of its NDC is in the context of the NDC submitted by Peru on 18 December 2020. The TERT noted that the Party submitted a new NDC on 6 November 2025.

net GHG emissions of 179.0 Mt CO₂ eq in 2030 contingent on the availability of international financing and the existence of favourable conditions.

13. The indicator that Peru selected to track progress in implementing and achieving its NDC is described in table 3.

Table 3

Description of the indicator(s) selected by Peru to track progress in implementing and achieving its nationally determined contribution

<i>NDC target</i>	<i>Indicator</i>	<i>Description</i>
Unconditional economy-wide absolute target of limiting net GHG emissions to 208.8 Mt CO ₂ eq in 2030, and, conditional on receiving additional support, a target of limiting net GHG emissions to 179.0 Mt CO ₂ eq in 2030	Total annual net GHG emissions, expressed in Mt CO ₂ eq	Total annual net GHG emissions, consistent with the scope of the NDC, expressed in CO ₂ eq as reported in the national GHG inventory

Sources: Peru's BTR1 and CTF table 1.

14. The TERT noted that the contribution of LULUCF to achieving the NDC is included in the Party's target-year level and that Peru plans to use ITMOs and A6.4ERs from cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement and the mechanism established by Article 6, paragraph 4, of the Paris Agreement towards the achievement of its NDC.

15. Table 4 summarizes information on progress in implementing the NDC based on the indicator total annual net GHG emissions taking into account the type of Peru's NDC target, including quantitative values for the implementation period, including the most recent year available and target year.

Table 4

Summary of information on Peru's progress in implementing and achieving its nationally determined contribution based on total annual net GHG emissions

(Mt CO₂ eq)

	<i>Total annual net GHG emissions</i>	<i>Contribution of LULUCF, as applicable</i>	<i>ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable</i>	<i>Indicator adjusted for contribution of LULUCF and ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable</i>
2021	194.90	NA	NA	194.90
Fixed-level target ^a	208.80	NA	NA	208.80

Sources: Peru's BTR1 and CTF table 4.

^a Target level corresponds to an unconditional NDC target.

16. According to the most recent information on total annual net GHG emissions provided in CTF table 4, in 2021 Peru's total annual net GHG emissions were 194,895.53 kt CO₂ eq. The indicator is 6.7 per cent below the emission level corresponding to the fixed target level in 2030.

17. Peru reported information on the actions and PaMs that support the implementation and achievement of its NDC. Table 5 provides a summary of the reported information on the key PaMs of Peru.

Table 5
Summary of information on key policies and measures reported by Peru

<i>Sector</i>	<i>Key PaMs^a</i>	<i>Estimate of expected GHG emission reductions in 2030 (kt CO₂ eq)</i>
Energy		
Energy efficiency	Clean cooking	1 926.00
	Replacement of high-pressure sodium vapour street lighting lamps with light-emitting diodes	1 104.00
	Energy efficiency labelling	488.00
Energy supply and renewables	Renewable energy mix	3 793.00
Transport	Operation of the Lima metropolitan bus system and extensions	76.00
	Implementation of lines 1 and 2 of the Lima and Callao Metro	124.00
	Promotion of natural gas use by light vehicles	219.00
IPPU	Clinker substitution to reduce the clinker/cement ratio	954.00
	Reduction of N ₂ O emissions in the manufacture of nitric acid	29.00
Agriculture	Intermittent drying systems in rice cultivation for GHG abatement	270.00
LULUCF	Sustainable forest management in forest concessions	8 329.00
	Community forest management	1 330.00
	Forest conservation mechanisms in native communities	5 757.00
	Allocation of land rights in the Peruvian Amazon	12 202.00
Waste	Construction of landfills	130.00

Sources: Peru's BTR1 and CTF table 5.

^a Names of PaMs reproduced as reported in Peru's BTR and CTF table 5.

18. In considering the impact of mitigation PaMs on the progress of implementation and achievement of the NDC, the TERT noted that PaMs, actions and plans have only started to have an impact on GHG emission limitations in the agriculture, LULUCF and waste sectors. In these sectors, GHG emissions slightly decreased or stabilized in 2020–2021, while GHG emissions increased in the energy sector, where trends were driven by a significant increase in transport activities, and the IPPU sector, which indicates that economic drivers such as increased demand for raw materials and products that use GHGs, and population growth counteracted the initial effects of mitigation PaMs in this period, while the coronavirus disease 2019 pandemic and the economic contraction in the country supplemented the effects of mitigation PaMs. In 2020, owing to the effects of the pandemic, total national emissions (excluding LULUCF) decreased by 11.2 per cent compared with the 2019 level, whereas in 2021, total national emissions (excluding LULUCF) increased by 16.9 per cent compared with the 2020 level and by 57.0 per cent compared with the 2000 level. Nevertheless, although Peru has established a comprehensive set of mitigation measures for the 2021–2030 implementation period, the current national GHG inventory only covers emissions until 2021, and it is not yet possible, therefore, to determine the specific impacts of these measures on GHG emission trends or establish a clear analytical link between sectoral actions and the

evolution of the GHG emissions. The TERT noted that, although the Party is currently working on strengthening its institutional arrangements and technical capacities with regard to quantifying these impacts in future reporting cycles, it might consider strengthening the implementation of existing mitigation actions and planning for additional mitigation actions to address possible increasing trends in GHG emissions.

19. Historically, forest ecosystems have been the source with the highest level of GHG emissions in Peru. These emissions originate from deforestation caused by the anthropogenic conversion of forests to, inter alia, agricultural land, grasslands and mining areas. In 2021, the main source of CO₂ emissions was LULUCF, while the largest share of CH₄ and N₂O emissions was generated by agricultural activities (mainly from enteric fermentation) and HFC emissions corresponding entirely to the use of these substances in refrigeration and air conditioning in the IPPU sector.

20. Peru did not provide information on GHG emission projections as it applied the flexibility provided for in paragraph 92 of the MPGs.

21. The TERT assessed Peru's progress towards its NDC target on the basis of the information reported for 2021 and notes that the level of total annual net GHG emissions in the most recent reported year (2021) is 13.90 Mt CO₂ eq below the level corresponding to the unconditional target of limiting total net GHG emissions to 208.80 Mt CO₂ eq in 2030. The TERT also notes that there are not yet enough data to sufficiently assess the Party's progress in implementing the NDC, as data are available for only one year in the implementation period (2021–2030). The TERT further notes that regular monitoring of total annual net GHG emissions and the results of mitigation actions allows adjustments to be made as needed towards achieving the target of limiting total annual net GHG emissions to 208.80 Mt CO₂ eq in 2030.

C. Consideration of the Party's support provided¹⁷

22. Peru does not consider itself subject to the reporting obligations applicable to developed country Parties pursuant to Article 13, paragraph 9, of the Paris Agreement and did not report information in its BTR1 on financial, technology transfer and development, and capacity-building support provided to developing country Parties under Articles 9–11 of the Paris Agreement (see para. 11 above).

D. Identification of areas of improvement¹⁸

23. During the technical expert review, the TERT identified areas of improvement in relation to Peru's implementation of Article 13 of the Paris Agreement, which are summarized in chapter II.A above and included in the assessment tables referred to in paragraph 6 above.

E. Assistance in identifying capacity-building needs¹⁹

24. The TERT, in consultation with Peru, identified the following prioritized needs for capacity-building to facilitate the Party's reporting in its BTR relating to the flexibilities applied by it as per the MPGs:²⁰

(a) Strengthening capacities of the national inventory team with the aim of completing the time series of AD for historical years and ensuring methodological consistency for land-use representation over time;

¹⁷ As per para. 146(c) of the MPGs.

¹⁸ As per para. 146(d) of the MPGs.

¹⁹ As per para. 146(e) of the MPGs.

²⁰ For a complete list of the capacity-building needs identified by the TERT in consultation with the Party, see table 15 in document FCCC/ETF/TERR.1/2004/PER/Add.1.

(b) Enhancing national technical capacity for estimating GHG emission reductions achieved through implemented PaMs, including through data collection, aggregation of PaMs and an assessment of the contribution of PaMs to achieving the NDC target;

(c) Strengthening the technical capacity of the national team to develop and maintain a system for reporting GHG projections that includes robust institutional arrangements, with a specific focus on enhancing modelling for the LULUCF sector.

25. Furthermore, in order to facilitate continuous improvement in reporting, the following additional capacity-building needs were identified during the review:

(a) Enhancing knowledge management across institutions contributing to the preparation of the BTR and the GHG inventory with the aim of preserving institutional memory and ensuring a systematic approach to documentation, thereby supporting sustainability in the preparation of the BTR and the GHG inventory;

(b) Strengthening institutional and technical capacity for developing country-specific EFs and parameters, including through the collection of AD, necessary for enabling the application of higher-tier methods in line with the 2006 IPCC Guidelines;

(c) Strengthening national technical capacity with the aim of enhancing the energy statistical framework to enable it to produce data needed for the compilation of the national GHG inventory, including with regard to analysing non-energy use of fuels and end use of fuels;

(d) Strengthening technical capacities of the inventory team with regard to applying the enhanced characterization of livestock needed to develop tier 2 emission estimates, including in relation to methodological development and data collection for producing estimates for llamas and alpacas;

(e) Strengthening national capacities for improving the national forest inventory for the purpose of GHG inventory compilation, including through the redesign of sampling methodology and the formulation of country-specific allometric equations;

(f) Strengthening the national capacity to systematically collect, process and analyse AD, as required for the complete estimation of GHG emissions for the waste sector, in particular for solid waste disposal, biological treatment of solid waste and incineration and open burning;

(g) Enhancing national technical capacity for developing sector-specific guidelines for collecting information on costs, non-GHG mitigation benefits and how mitigation actions interact with each other;

(h) Strengthening national technical capacity for identifying, calculating and assessing longer-term trends in GHG emissions and removals due to PaMs.

26. Peru also identified the capacity-building support needs in its BTR1 (table 4.3).

III. Conclusions and recommendations

27. The TERT conducted a technical expert review of the information reported in the BTR1, NID, CRTs and CTF tables of Peru in accordance with the MPGs.

28. The areas of improvement identified by the TERT on the basis of the review of the consistency of the information reported by Peru with the MPGs are summarized in chapter II.A above and included in the assessment tables referred to in paragraph 6 above.

29. The TERT notes that the level of total annual net GHG emissions in the most recent reported year (2021) is 13.90 Mt CO₂ eq below the level corresponding to the unconditional target for 2030. The TERT also notes that there are not yet enough data to sufficiently assess the Party's progress in implementing the NDC, as data are available for only one year in the implementation period (2021–2030).

30. The TERT notes that PaMs, actions and plans have only started to have an impact on GHG emission limitations in the agriculture, LULUCF and waste sectors. In these sectors,

GHG emissions slightly decreased or stabilized in 2020–2021, while GHG emissions increased in the energy and IPPU sectors, which indicates that economic drivers such as increased demand for raw materials and products that use GHGs, and population growth counteracted the initial effects of mitigation PaMs in this period, while the coronavirus disease 2019 pandemic and the economic contraction in the country supplemented the effects of mitigation PaMs. Although Peru has established a comprehensive set of mitigation measures for the 2021–2030 implementation period, the current national GHG inventory only covers emissions until 2021, and therefore it is not yet possible to determine the specific impact of these measures on GHG emission trends or establish a clear analytical link between sectoral actions and the evolution of GHG emissions.

31. Peru does not consider itself subject to the reporting obligations applicable to developed country Parties pursuant to Article 13, paragraph 9, of the Paris Agreement and, in accordance with the MPGs, did not report information on financial, technology development and transfer, or capacity-building support provided to developing country Parties under Articles 9–11 of the Paris Agreement in its BTR1.

32. Regarding the implementation of Article 13 of the Paris Agreement and transparency-related activities, Peru required support for enhancing knowledge management across institutions related to preparing BTRs, applying higher-tier methods for key categories in the GHG inventory, enhancing the energy statistical framework, applying enhanced characterization of livestock, improving the national forest inventory, reporting a complete time series of emission and removal estimates for land use and land-use change, collecting, processing and analysing AD for the waste sector, estimating GHG emission reductions achieved by PaMs, collecting information on costs and non-GHG mitigation benefits of PaMs, assessing longer-term trends in GHG emissions and developing and maintaining a system for reporting GHG projections.

33. In consultation with Peru, the TERT identified reporting-related needs for capacity-building support relating to the flexibilities applied by the Party as per the MPGs that could facilitate the Party's preparation of subsequent BTRs. For Peru, the main reporting-related needs for capacity-building support are strengthening capacities of the national inventory team with the aim of completing the time series of AD for historical years, ensuring methodological consistency for land-use representation over time; enhancing national technical capacity for estimating GHG emission reductions achieved through implemented PaMs; and strengthening the technical capacity of the national team to develop and maintain a system for reporting GHG projections, with a specific focus on enhancing modelling for the LULUCF sector.

Annex I

Outcome of the review conducted on a voluntary basis of the information reported by the Party in its first biennial transparency report pursuant to chapter IV of the modalities, procedures and guidelines

I. Summary of reported information

1. In its BTR1 Peru provided information related to climate change impacts and adaptation under Article 7 of the Paris Agreement pursuant to chapter IV of the MPGs and, as per paragraph 1 of decision 9/CMA.4, on a voluntary basis, requested the secretariat to organize a review of that information as part of the technical expert review pursuant to chapter VII of the MPGs.

2. In accordance with chapter IV of the MPGs, Peru provided information on its climate change impacts; risks and vulnerabilities; adaptation priorities and barriers to implementing adaptation action; and cooperation, good practices, experience and lessons learned in relation to climate change impacts and adaptation, which is summarized in table I.1.

Table I.1

Summary of information on vulnerability and adaptation to climate change reported by the Party

<i>Priority adaptation sector or area</i>	<i>Vulnerability and adaptation measures reported</i>	<i>Challenges and constraints</i>	<i>Cooperation, good practices, experience and lessons learned</i>
Fisheries	Vulnerability: In the context of economic dependence on fisheries (especially artisanal fisheries), concentration of fishing activities in exposed coastal areas, and production chains that are sensitive to biomass fluctuations, vulnerabilities relate to impacts resulting from changes in sea surface temperature, variability in the availability and distribution of hydrobiological resources, and recurrent impacts during El Niño events. Adaptation measures: (1) Capacity-building of fishing agents on selective fishing techniques (releasing marine species caught as by-catch) and on the use of improved fishing gear; (2) carrying out a study on the effects of climate scenarios on the artisanal fishing landing site in San Andrés with a view to designing resilient and sustainable infrastructure; and (3) strengthening aquaculture management by producers to reduce risk of cold spells and prevent mudslides.	The main challenges were identified transversally for all adaptation areas: (a) Insufficient linkages between development goals and climate action goals; (b) Weak institutional frameworks for climate change management; (c) Lack of multisectoral and multilevel coordination; (d) Lack of means to implement measures.	The main examples of experience and lessons learned were reported transversally for all adaptation areas: Vision as a country: (a) Build a shared vision to align public policies and adaptation measures; (b) Consistently integrate climate change as a cross-cutting priority in all sectors; (c) Promote stronger visibility and institutional support across all government levels with regard to the consequences of and response to climate change; (d) Reflect adaptation actions in sectoral and subnational planning instruments, such as decrees and regulations. Institutionalization of climate action: (a) Assign clear institutional responsibilities for adaptation measures;
Food and agriculture ^a	Vulnerability: In the context of extended small-scale family farming, limited use of technology, high exposure to impacts in high Andean areas, and dependence on		

Priority adaptation sector or area	Vulnerability and adaptation measures reported	Challenges and constraints	Cooperation, good practices, experience and lessons learned
Forests	climate-sensitive crops, vulnerabilities relate to increased crop losses due to extreme events (frost, droughts, heavy rains and El Niño), changes in agroclimatic suitability and an increase in pests. Adaptation measures: (1) Improving soil fertility and crop productivity through enhanced fertilization practices, with guano available to producers at a subsidized price; (2) recovery of natural grasslands through infiltration ditches, grass planting on embankments, microreservoirs and forest plantations; (3) productive diversification in crops through productive conversion projects; and (4) management and conservation of cultivated grasses as food supplements through the distribution of cultivated grass seed kits, forage conservation kits and plantation of pasture. Vulnerability: In the context of land-use change, dependence of Indigenous and rural communities on forest resources, limited monitoring capacity and the sensitivity of Amazonian and Andean ecosystems to climate change, vulnerabilities relate to increased rates of degradation and disruption of ecosystem services due to interaction of droughts and deforestation. Adaptation measures: (1) Recovery of ancestral knowledge and practices in the sustainable use of ecosystems; (2) restoration of ecosystems within the National System of Protected Natural Areas, maintaining landscape connectivity and through reforestation; (3) use of sustainable practices for the conservation of ecosystems in watersheds by granting rights for the sustainable use of forest resources of 16 protected natural areas; (4) implementation of monitoring and control actions in protected natural areas; (5) implementation of options for restoring forest ecosystems and other wild vegetation ecosystems while maintaining landscape functionality and ecosystem services based on forestry research into innovative restoration practices; and (6) implementation of early warning system for		(b) Ensure engagement of high-level government leadership; (c) Avoid re-evaluations caused by personnel turnover; (d) Involve climate authorities and civil society actors. Multisectoral, multilevel and multi-stakeholder participation: (a) Establish strategies for ensuring the involvement of all organizational units of government departments and institutions at the subnational level; (b) Adopt a strategic, coordinated and participatory approach, including through the use of clear climate action guidelines and the involvement of multi-stakeholder groups. Recognition of the limitations and potential of the country and its sectors: (a) Set realistic targets for adaptation measures to ensure compliance and enable increasing ambition over time; (b) Report evidence of progress and identify concrete needs for future submissions; (c) Promote resilience in sectoral and subnational authorities to adjust to changing circumstances; (d) Keep adaptation goals and intervention areas flexible to incorporate new initiatives. Climate finance: (a) Link the formulation of adaptation measures and their targets to efforts to finance their implementation; (b) Identify reliable sources of climate finance.

<i>Priority adaptation sector or area</i>	<i>Vulnerability and adaptation measures reported</i>	<i>Challenges and constraints</i>	<i>Cooperation, good practices, experience and lessons learned</i>
Health ^a	extreme climatic and non-climatic hazards and forest fires. Vulnerability: Gaps in health infrastructure and service coverage, high exposure of populations in poverty to health impacts, differentiated vulnerability of sensitive groups, spread of vector-borne diseases, increase in diseases associated with extreme events, mental health impacts and indirect impacts due to food insecurity and poor access to safe water. Adaptation measures: (1) Strengthening public health surveillance in networks that incorporate information related to health hazards and climate change vulnerability through a publicly accessible web application that provides up-to-date information on climate and health; (2) strengthening human resources training; and (3) promoting healthy practices related to increased extreme temperatures, vector-borne diseases, and contaminated food and water through the preparation and distribution of educational material, systematization of community strategies addressing climate change risks and development of a training module for health personnel.		Capacity-building: (a) Strengthen capacities of technical and political stakeholders at all levels to reduce risks and seize opportunities; (b) Adapt traditional state planning models to include environmental variables and climate-related risks; (c) Institutionalize learning from sectoral authorities with a view to understanding sector-specific adaptation action under their competencies; (d) Ensure coordination of sectoral actions and increase climate awareness among professionals. Establishment of synergies: (a) Promote coordination among all institutions involved in climate change management across levels of government, and align their objectives and strategies; (b) Improve coordination among national authorities and with non-state actors to create synergies and joint strategies; (c) Use previous experience in mitigation for increasing authorities' openness to formulating adaptation measures; (d) Use territorial planning as essential action for achieving adaptation goals. Information management: (a) Enhance information-sharing and multisector communication; (b) Promote information exchange among climate authorities and between climate authorities and non-state actors;
Water ^a	Vulnerability: Significant glacier retreat in the Andes, greater variability in precipitation, increased frequency and intensity of droughts, floods and land mass movements, risk of reduced water availability from glacial and rainwater sources in basins with high demand (for urban, agricultural and energy generation uses), exposed infrastructure, increasing water stress, and limited storage and regulation capacities. Adaptation measures: (1) Water for agriculture: capturing and storing rainwater by building dams and infiltration ditches and implementing physical protection infrastructure in watersheds to protect against hazards in the Tembla ravine; (2) water for energy: training 13 watershed resource councils in using a guide for analysing and estimating climate risk in watersheds for promoting the use of protective infrastructure in electricity		

<i>Priority adaptation sector or area</i>	<i>Vulnerability and adaptation measures reported</i>	<i>Challenges and constraints</i>	<i>Cooperation, good practices, experience and lessons learned</i>
	generation; and (3) water for population: (a) increasing formal water availability in urban areas through eight optimized master plans with a 30-year projection for sustainable and economical investment programming by sanitation service providers, three of which ensure sustained coverage of water demand by 2030; (b) incorporating the Ecosystem Services Compensation Mechanism for implementing natural infrastructure for the conservation, recovery and sustainable use of water ecosystem services in vulnerable areas; (c) implementing water-saving technologies in urban areas; and (d) implementing climate change mitigation and adaptation plans among sanitation service providers.		(c) Ensure continuous monitoring, identify gaps and use new evidence to advance towards adaptation goals.

^a Thematic target under the United Arab Emirates Framework for Global Climate Resilience.

3. Peru provided a description of its adaptation strategies, policies, plans and goals; the actions it has taken to integrate adaptation into national policies and strategies; and its progress in implementing adaptation action, and information on its monitoring and evaluation of adaptation actions and processes, which is summarized within the context of the iterative adaptation cycle in table I.2.

Table I.2

Summary of information on the iterative adaptation cycle reported by the Party

<i>Dimension</i>	<i>Information on progress reported</i>
Impact, vulnerability and risk assessment	Impact, vulnerability and risk assessment: The National Meteorology and Hydrology Service developed climate scenarios for precipitation and air temperature for 2050. The precipitation scenario projects an annual reduction in most of the national territory. In most of the Andes, the scenario forecasts a decrease in precipitation of up to 30 per cent in the Cordillera Oriental. Similarly, in the Amazon, lower precipitation is forecasted, with a decrease of up to 30 per cent. The Party reported that moderate to extreme meteorological drought events were detected between 1981 and 2023, affecting different regions of the country. In the Altiplano (southern highlands), there was a severe rainfall deficit in 2021 and 2022, which has had a negative impact on the water level of Lake Titicaca and has affected rural producers and the general population. One of the most noticeable impacts of rising temperatures in Peru is glacier retreat, which is gradually increasing and has become more pronounced since 1950, with a verified continuous retreat at a rate of 4.97 km/year for the glaciers in the Peruvian territory. The level of danger caused by glacier retreat is gradually increasing, affecting the country's water availability, particularly in areas associated with glaciated watersheds, and generating risks, such as the formation of glacial lakes, with the consequent risk of triggering floods. Multi-hazard early warning systems: the Party reported that since 2019 the Satellite for Monitoring and Impacts on Forest Heritage system has been providing real-time data on deforestation, illegal logging and forest fires. This public resource provides critical information for the management and protection of fragile ecosystems, enabling a more effective and timelier response.

<i>Dimension</i>	<i>Information on progress reported</i>
Planning	The two key documents for the planning of adaptation actions in the country are the National Policy: National Strategy for Climate Change to 2050 and the National Climate Change Adaptation Plan, which guides adaptation planning with the objective of reducing exposure and vulnerability to climate change and increasing adaptive capacity, with a double time-horizon of 2030 and 2050. Also, the Party counts with the National Plan for Disaster Risk Management 2022–2030, which includes guidelines for strengthening the implementation of disaster risk management in the spatial planning and management of regional and local governments. Peru defined its priority thematic areas for adaptation in the first NDC as (1) water, (2) agriculture, (3) forests, (4) fisheries and aquaculture and (5) health. These priority areas were chosen on the basis of their vulnerability, the availability of baseline information and the existence of an entity responsible for meeting the respective development and environmental goals. In addition, these areas were selected on the basis of priority sectors and areas for national development identified by different national and subnational actors. Recently, tourism and transportation were defined as new priority thematic areas for adaptation, with planning activities currently being carried out by the relevant sectoral authorities.
Implementation	Peru has 84 adaptation measures covering the five above-listed priority thematic areas for adaptation. Peru specified that the adaptation actions to be prioritized are implementing concrete activities that benefit the population and focusing on individuals' means of life. Peru also described the active involvement of regional and local authorities and Indigenous communities in the implementation of adaptation actions. The Party classified the degree of progress in implementing adaptation measures using three categories according to the status of implementation: measures under implementation; measures developing enabling conditions; and measures with no progress. During the review, Peru indicated that the proportion of the 84 adaptation measures under implementation rose from 39 to 51 per cent in 2022–2024. In the same period, the proportion of measures with no progress decreased from 19 to 11 per cent. Regarding the distribution of the implemented measures among the priority thematic areas for adaptation, most of the measures under implementation are linked to water (61.0 per cent), followed by agriculture (53.0 per cent) and forests (50.0 per cent). For fisheries and aquaculture, and health, 33.3 per cent of measures were under implementation in 2023.
Monitoring, evaluation and learning	Peru has a domestic system for monitoring and evaluating the implementation of adaptation actions governed by Article 8 of the Regulation of the Framework Law on Climate Change. The regulations establish an operational process whereby sectoral entities submit their reports to the national authority (MINAM), using climate action sheets, within the first 60 working days of each year. Peru is developing a new system for monitoring adaptation and mitigation measures (SIMON) consisting of a set of actions, provisions, processes and tools for monitoring and digitally reporting on the level of progress in implementing adaptation and mitigation actions at all three levels of government (national, regional and local). The system for monitoring adaptation and mitigation measures will consist of three components: monitoring and evaluation of adaptation measures; measurement, reporting and verification of emissions, removals, emission reductions and removal increases; and monitoring and reporting on the financing of adaptation and mitigation measures. The functional structure of the system's component for monitoring and evaluating adaptation measures includes five processing and reporting modules, which are currently in the prototype development phase: management and planning for adaptation measures; progress of adaptation measures; climate risk; medium- and long-term assessment of adaptation measures; and reporting on monitoring and evaluation. Once the system is fully developed and operational, which is expected to be achieved by 2030, the data and information that have already been collected will be migrated to the system's adaptation measures

<i>Dimension</i>	<i>Information on progress reported</i>
	component, which will facilitate the assessment of the overall efficiency, efficacy and effectiveness of adaptation measures.

4. Peru did not provide information on averting, minimizing and addressing loss and damage associated with climate change impacts. The Party explained in the BTR1 (p.112) that it does not yet have sufficient capacity to report this information. During the review, Peru highlighted the work that has begun at the national level to prevent, minimize and address loss and damage related to the impacts of climate change (see ID# I.3.7 in table I.3).

II. Areas of improvement identified during the technical expert review of the reporting in the Party's first biennial transparency report on climate change impacts and adaptation under Article 7 of the Paris Agreement pursuant to chapter IV of the modalities, procedures and guidelines

5. The TERT assessed the information reported on climate change impacts and adaptation under Article 7 of the Paris Agreement pursuant to chapter IV of the MPGs in the BTR1 of Peru and identified areas of improvement relating to consistency with the MPGs, which are described in table I.3. All encouragements contained in the table are for the next BTR, unless otherwise specified.

Table I.3

Areas of improvement of the reporting on climate change impacts and adaptation under Article 7 of the Paris Agreement

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with encouragement</i>
I.3.1	Specified in paragraph 107(b–c) of the MPGs	In BTR1 sections 3.4–3.5 (pp.85–88), Peru reported information on the potential impacts of climate change and on the sectoral, economic, social and/or environmental vulnerabilities under the prioritized thematic areas identified in the NAP and described relevant variables used to evaluate sectoral, economic, social and environmental vulnerabilities in those areas. However, Peru did not include information on or cross-references to the vulnerability assessment reported in the NAP, with the exception of some information on observed impacts on glaciers and the consequences of those impacts. Furthermore, in the BTR1, Peru included some information on approaches, methods and tools used in estimating current and projected climate trends and hazards (sections 3.2–3.4, pp.80–88) and on the variables used to evaluate different vulnerabilities (section 3.5, p.88), but it did not provide information on associated uncertainties. During the review, Peru indicated that, to avoid the duplication of information between reports submitted under the Convention, the BTR does not address the impacts observed and vulnerabilities for each prioritized thematic area, as this information is included in the NAP, and referred specifically to the pages in the NAP where detailed information is reported on impacts and vulnerabilities under the five prioritized thematic areas and briefly summarized the information reported for each of them. In addition, Peru provided an overview of the sources of uncertainties related to models, emissions scenarios and observational data in projecting extreme events and distinguishing between the effects of climate change and natural variability. The Party also described limitations in the availability of and access to data and information, mainly on socioeconomic factors, at an appropriate scale, as well as data gaps at the sectoral level and technical capacity constraints at the subnational level. The Party noted that it will provide more detailed information on the main sources of uncertainties and methodological challenges in future BTRs. The TERT encourages Peru to provide, as appropriate, information on the observed and potential impacts of climate change, including sectoral, economic, social and/or environmental vulnerabilities, or cross reference other existing documents that report this information. The TERT also encourages the Party to provide, as appropriate, information on associated uncertainties for current and projected climate trends and hazards and for observed and potential impacts of climate change.

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with encouragement</i>
I.3.2	Specified in paragraph 109(c) and (e) of the MPGs	Peru reported information on how gender perspectives and Indigenous, traditional and local knowledge are integrated into adaptation in BTR sections 3.1.2.1 and 2.1.2.3 (pp.78 and 43–47 respectively); however, it did not provide information on how best available science is integrated into adaptation or information on specific adaptation actions or economic diversification plans leading to mitigation co-benefits. During the review, Peru provided an overview of how science is currently integrated into adaptation. Peru described the active interaction between research institutions and national adaptation efforts, noting that the engagement of the academic sector is coordinated through the Academia Driving Group within the framework of the National Commission on Climate Change, in which several public research institutes and national and regional universities participate. This interaction is operationalized by incorporating scientific studies and climate scenarios in the NAP and implementing Peru's NDC as enabling conditions for interaction, developing research projects, providing technical assistance to regional and sectoral governments, and delivering capacity-building through training programmes and knowledge transfer initiatives. Peru also provided information on the publication of a guide that requests sectoral stakeholders to identify potential contributions of each adaptation measure to GHG emission reductions and on the identification of adaptation actions that contribute to GHG emission reductions. Peru indicated that details of the mitigation contributions of its 84 national adaptation measures can be found in the NDC adaptation measures catalogue. Peru mentioned that it will evaluate the possibility of including a section in future BTRs describing the mitigation co-benefits of adaptation measures. The TERT encourages Peru to provide, as appropriate, information on how best available science is integrated into adaptation and on specific adaptation actions or economic diversification plans leading to mitigation co-benefits.
I.3.3	Specified in paragraph 110(e) of the MPGs	Peru reported in BTR sections 2.1.2.1, 2.1.2.2 and 2.1.2.3 (pp.38–47) information on coordination activities among the three levels of government (national, regional and local) and other involved public institutions. However, the Party did not specify the process for changing regulations, policies and planning. During the review, Peru provided information on the process for changing regulations, policies and planning, which is based on the Framework Law on Climate Change and its regulation, which enabled MINAM to develop relevant operational and procedural guidance. In some cases, this guidance has been formalized through MINAM ministerial resolutions (e.g. a recently approved guide for formulating and updating adaptation and mitigation measures that make up NDCs). The TERT encourages Peru to provide, as appropriate, information on the process for changing regulations, policies and planning.
I.3.4	Specified in paragraph 111 of the MPGs	Peru did not include in its BTR information on the implementation of supported adaptation actions, or the effectiveness of already implemented adaptation measures. During the review, Peru only explained that the sectoral authorities have the technical competence and obligation to monitor, evaluate and report on the progress of implementation of the adaptation and mitigation measures under their responsibility. The TERT encourages Peru to include in the BTR, as appropriate, information on the implementation of supported adaptation actions, and the effectiveness of already implemented adaptation measures.
I.3.5	Specified in paragraph 113(a), (c) and (d) of the MPGs	Peru provided in BTR section 3.8 (pp.100–108) some information related to monitoring and evaluation, such as on achievements, impacts and results of its adaptation actions; and approaches and systems used, and their outputs; as well as the transparency of planning and implementation and how support programmes meet specific vulnerabilities and adaptation needs. However, Peru did not provide information on resilience, review and effectiveness of the implemented adaptation actions; assessment of and indicators for how adaptation increased resilience and reduced impacts, when adaptation is not sufficient to avert impacts, and how effective implemented adaptation measures are; or how adaptation actions influence other development goals.

ID#	Reporting requirement	Description of area of improvement with encouragement
I.3.6	Specified in paragraph 114 of the MPGs	During the review, Peru indicated that in order to evaluate and report on how adaptation has increased resilience and reduced impacts and assess the efficiency, efficacy and overall effectiveness of adaptation measures, it requires more time for monitoring the implementation of adaptation measures. The Party mentioned that, when the adaptation component of the system for monitoring adaptation and mitigation measures (SIMON) is fully operational, it will include modules for measuring implementation progress (effectiveness and efficiency) through its indicators, as well as modules for measuring results (effectiveness). The Party also indicated that it faces challenges in obtaining more detailed information and accessing the best available science to determine how adaptation actions may be improving resilience conditions, and that it is developing a road map for loss and damage associated with climate risks when adaptation limits are exceeded. The Party further indicated that the 84 adaptation measures contribute in different ways to almost all of the SDGs, but primarily to SDG 13 (climate action). Peru noted that, to date, the sectors responsible for implementing adaptation measures have not yet quantified the potential contribution of the measures to other development objectives. Peru also noted that details of the contributions to the SDGs of its 84 adaptation measures can be found in the NDC adaptation measures catalogue. The Party recognized the importance of describing these aspects and plans to report on them in future BTRs. The TERT encourages Peru to provide, as appropriate, information on resilience, review and effectiveness of the implemented adaptation actions; assessment of and indicators for how adaptation increased resilience and reduced impacts, when adaptation is not sufficient to avert impacts, and how effective implemented adaptation measures are; and how adaptation actions influence other development goals. Peru provided information on ownership, stakeholder engagement and alignment of adaptation actions with national and subnational policies in BTR section 3.7 (pp.95–99) and on the results of adaptation actions in BTR section 3.8 (pp.100–108). However, it did not provide information on replicability of adaptation actions or on the sustainability of the results of adaptation actions. During the review, Peru provided information on how MINAM, by providing technical assistance to subnational local and regional governments, promotes the deployment of sectoral adaptation measures to be implemented across multiple regions and localities in the country. In this context, adaptation measures are designed to ensure replicability considering their transferability with regard to different territories; their scalability with regard to reaching the largest possible number of vulnerable people; and their technical and regulatory sustainability, given their compliance with the Framework Law on Climate Change. Peru also provided an overview of the sustainability of its adaptation measures from different perspectives: the implementation of adaptation measures is supported through the institutional budgets of the responsible ministries pursuant to the applicable regulatory framework, while the availability of such budgetary arrangements should be distinguished from an assessment of the adequacy of financing for scaling; all adaptation measures contribute to the SDGs, thereby strengthening sustainability through an integrated development approach; and adaptation measures are aligned with the global goal on adaptation and integrated with national and subnational policies, and there is multisectoral and multilevel governance. The TERT encourages Peru to report, as appropriate, information on the replicability of adaptation actions and the sustainability of their results.
I.3.7	Specified in paragraph 115(b) of the MPGs	Peru did not provide in the BTR information on activities related to averting, minimizing and addressing loss and damage associated with the adverse effects of climate change. Peru explained in the BTR (p.112) that it does not yet have sufficient capacity to report this information. During the review, Peru indicated that it is committed to addressing and managing loss and damage associated with climate change, with targets projected for 2030 and 2035 in its third NDC. Peru also described the creation of a multisectoral working group for developing a road map for loss and damage management, which will be responsible for formulating, implementing and leading a national framework for managing loss and damage. Additionally, the Party highlighted the need to

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with encouragement</i>
		strengthen the technical capacities of national experts to assess economic and non-economic loss and damage attributable to climate change, including from relevant slow-onset hazards, and to design national measures for reducing loss and damage, encompassing relevant methodologies. Lastly, Peru indicated that it considers that it will be able to incorporate information on progress in implementing these activities in future BTRs.
		The TERT encourages the Party to provide, as appropriate, information on activities related to averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, taking into account projected changes in climate-related risks, vulnerabilities, adaptive capacities and exposure to climate change.
I.3.8	Specified in paragraph 116(b) of the MPGs	Peru provided in BTR table 3.8 (pp.111–112) information on efforts to share information, good practices, experience and lessons learned. However, it did not provide information on strengthening scientific research and knowledge related to climate, including research and systematic observation and early warning systems, to inform climate services and decision-making; vulnerability and adaptation; and monitoring and evaluation. During the review, Peru provided information on the main institutions and main functions related to climate research, systematic observation and early warning systems; vulnerability and adaptation; and monitoring and evaluation. Peru described the active interaction between public research institutions and national adaptation efforts and noted that, in future BTRs, this coordination may be further systematized and made more visible by explicitly describing how the scientific evidence generated by these institutions contributes to adaptation-related planning and decision-making processes. The TERT encourages the Party to provide, as appropriate, information related to strengthening scientific research and knowledge related to climate, including research and systematic observation and early warning systems, to inform climate services and decision-making; vulnerability and adaptation; and monitoring and evaluation.

III. Assistance in identifying capacity-building needs¹

6. In order to facilitate continuous improvement of the reporting in the BTR on climate change impacts and adaptation under Article 7 of the Paris Agreement pursuant to chapter IV of the MPGs, the following capacity-building needs were identified during the review:

(a) Strengthening technical capacity of national experts to conduct vulnerability and risk assessments, primarily at the subnational level, and to assess and address the specific climate change impacts on each prioritized thematic area for adaptation, including through the provision of assistance in improving access to socioeconomic and cultural data at an appropriate scale (high priority);

(b) Strengthening capacities for defining, implementing and reporting on adaptation indicators, which will assess efficiency, effectiveness and other relevant aspects of adaptation measures within the framework of the adaptation component of the system for monitoring adaptation and mitigation measures (SIMON), ensuring institutional interoperability at the national and subnational level (high priority);

(c) Strengthening the capacity of national experts to assess economic and non-economic loss and damage attributable to climate change and relevant slow-onset hazards, and to design and implement national measures for reducing loss and damage (high priority).

7. Peru also identified capacity-building support needs in its BTR1 to facilitate reporting in the BTR on climate change impacts and adaptation under Article 7 of the Paris Agreement pursuant to chapter IV of the MPGs (table 4.3, p.122).

¹ As per para. 146(e) of the MPGs.

Annex II

Documents and information used during the review

A. Reference documents

BTR1 of Peru. Available at <https://unfccc.int/first-biennial-transparency-reports>.

BTR1 CTF tables of Peru. Available at <https://unfccc.int/first-biennial-transparency-reports>.

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NDC of Peru. Available at <https://unfccc.int/NDCREG>.

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Third NDC of Peru (2025). Available at <https://unfccc.int/NDCREG>.

B. Additional information provided by the Party

Responses to questions during the review were received from Cristina Rodríguez (MINAM), including additional material. The following references were provided by Peru and may not conform to UNFCCC editorial style as some have been reproduced as received:

Carrera Luque, J. P. and Gómez Campos, F. R. (2025). *Estudio sobre la gestión de residuos sólidos en Perú: Estado actual y perspectivas de inversión europea sostenible. Informe final*. CESO CI International S.A. para la Delegación de la Unión Europea en Perú. Available at

<https://www.eeas.europa.eu/sites/default/files/2025/documents/Estudio%20sobre%20la%20gesti%C3%B3n%20de%20residuos%20s%C3%B3lidos%20en%20Per%C3%BA.pdf>.

Gautam Dutt, *Methane Density*, MGM International, 2003. Available at https://cdm.unfccc.int/methodologies/inputsconsmeth/MGM_methane.pdf.

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