



United Nations

FCCC/SBI/ICA/2016/TASR.1/COL



Framework Convention on  
Climate Change

Distr.: General  
29 September 2016

English only

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## **Technical analysis of the first biennial update report of Colombia submitted on 11 December 2015**

**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 (non-Annex I Parties), consistent with their capabilities and the level of support provided for reporting, were to submit their first biennial update report (BUR) by December 2014. The least developed country Parties and small island developing States may submit BURs at their discretion. Further, according to paragraph 58(a) of the same decision, the first round of international consultation and analysis (ICA) will be conducted for non-Annex I Parties commencing within six months of the submission of the Party's first BUR. The process of ICA consists of two steps: the technical analysis of the submitted BUR, followed by a workshop for the facilitative sharing of views under the Subsidiary Body for Implementation. This summary report presents the results of the technical analysis of the first BUR of Colombia conducted by a team of technical experts in accordance with the modalities and procedures contained in the annex to decision 20/CP.19.

GE.16-16838(E)



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## **I. Introduction and process overview**

### **A. Introduction**

1. According to decision 2/CP.17, paragraph 41(a), Parties not included in Annex I to the Convention (non-Annex I Parties), consistent with their capabilities and the level of support provided for reporting, were to submit their first biennial update report (BUR) by December 2014. The least developed country Parties and small island developing States may submit BURs at their discretion. Further, according to paragraph 58(a) of the same decision, the first round of international consultation and analysis (ICA) will be conducted for non-Annex I Parties, commencing within six months of the submission of the Party's first BUR. The process of ICA consists of two steps: the technical analysis of the submitted BUR, resulting in a summary report for each BUR analysed, followed by a workshop for the facilitative sharing of views under the Subsidiary Body for Implementation.

2. This summary report presents the results of the technical analysis of the first BUR of Colombia undertaken by a team of technical experts (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**

3. Colombia submitted its first BUR on 11 December 2015.

4. The technical analysis of the BUR took place from 29 February to 4 March 2016 in Bonn, Germany, 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: Mr. Carlos Mansilla (former member of the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE) from Guatemala), Ms. Julia Martínez (former member of the CGE from Mexico), Ms. Inês de Sousa Mourão (Cabo Verde), Mr. Raúl Salas (Mexico), Ms. Beatriz Sánchez Jiménez (Spain) and Ms. Sina Wartmann (Germany). Ms. Martínez and Ms. Sánchez Jiménez were the co-leads. Ms. Alma Jean and Ms. Karen Ortega (secretariat) provided administrative support to the TTE.

5. During the technical analysis, the TTE and Colombia engaged in discussion via e-mail, primarily to reach an understanding on the identification of capacity-building needs for the preparation of BURs in the ICA process. Following the technical analysis of the BUR, the TTE prepared and shared a draft summary report with Colombia on 31 May 2016 for its review and comment. Colombia, in turn, provided its feedback on the draft summary report on 25 August 2016.

6. The TTE responded to and incorporated the Party's comments referred to in paragraph 5 above and finalized the summary report in consultation with Colombia on 27 September 2016.

## **II. Technical analysis of the information reported in the biennial update report**

### **A. Scope of the technical analysis**

7. 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 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 chapter II.B below);

(b) A technical analysis of the information reported in the BUR, specified in the “UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention” (hereinafter referred to as the UNFCCC reporting guidelines on BURs) contained in annex III to decision 2/CP.17, and any additional technical information provided by the Party concerned (see chapter 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 chapter II.D below).

8. The remainder of this chapter presents the results of each of the three parts of the technical analysis of Colombia’s BUR outlined in paragraph 7 above.

### **B. Overview of the elements of information reported**

9. The elements of information referred to in paragraph 7(a) above include: the national greenhouse gas (GHG) inventory report; information on mitigation actions, including a description of such actions, an analysis of their impacts and the associated methodologies and assumptions, and the progress made in their implementation; information on domestic measurement, reporting and verification (MRV), and information support received.

10. Further, 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 9 above have been included in the BUR of the Party concerned. The results of that analysis are presented in tables 1, 2 and 3 below.

#### **1. National greenhouse gas inventory**

11. 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, paragraph 41(g), and paragraphs 3–10 of the UNFCCC reporting guidelines on BURs. Further, as per paragraph 3 of those guidelines, non-Annex I Parties are to submit updates of their national GHG inventories in accordance with paragraphs 8–24 of the “Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention” 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.

12. Table 1 presents results of the identification of the extent to which the elements of information on GHGs are included in the first BUR of Colombia in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 1

**Identification of the extent to which the elements of information on greenhouse gases are included in the first biennial update report of Colombia**

<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	Yes	
Decision 2/CP.17, annex III, paragraph 5	The updates of the sections on the 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 emission factor may be made in the subsequent full national communication	Yes	
Decision 2/CP.17, annex III, paragraph 9	The inventory section of the BUR should consist of a national inventory report as a summary or as an update of the information contained in decision 17/CP.8, annex, chapter III (National greenhouse gas inventories), including:	Yes	
	(a) Table 1 (National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and greenhouse gas precursors)	Yes	
	(b) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF <sub>6</sub> )	Yes	
Decision 2/CP.17, annex III,	Non-Annex I Parties are encouraged to include, as appropriate and to the extent that		

<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>
paragraph 6	capacities permit, in the inventory section of the BUR:		
	(a) Tables included in annex 3A.2 to chapter 3 of the IPCC good practice guidance for LULUCF	NA	Colombia provides comparable information, based on the 2006 IPCC Guidelines
	(b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines	NA	Colombia provides comparable information, based on the 2006 IPCC Guidelines
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 the previous national communications	Yes	
Decision 2/CP.17, annex III, paragraph 8	Non-Annex I Parties that have previously reported on their national GHG inventories contained in their national communications are encouraged to submit summary information tables of inventories for previous submission years (e.g. for 1994 and 2000)	Yes	
Decision 2/CP.17, annex III, paragraph 10	Additional or supporting information, including sector-specific information, may be supplied in a technical annex	Yes	Colombia provides additional information on enteric fermentation in annex 2.3 to the BUR
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	
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 the following gases by sources and removals by sinks:		
	(a) CO <sub>2</sub>	Yes	
	(b) CH <sub>4</sub>	Yes	
	(c) N <sub>2</sub> O	Yes	
Decision 17/CP.8, annex, paragraph 15	Non-Annex I Parties are encouraged, as appropriate, to provide information on	Partly	Colombia provides estimates for HFC-32, HFC-134a, HFC-152a, HFC-143a, HFC-

<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>
	anthropogenic emissions by sources of HFCs, PFCs and SF <sub>6</sub>		125, HFC-227ea and SF <sub>6</sub> ; however, the Party does not report emissions of PFCs
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 16	Non-Annex I Parties are encouraged, as appropriate, to report on anthropogenic emission by sources of other GHGs such as:		
	(a) CO	Partly	Colombia provides estimates for all categories except for emissions due to biomass burning in the AFOLU sector
	(b) NO <sub>x</sub>	Partly	Colombia provides estimates for all categories except for emissions due to biomass burning in the AFOLU sector
	(c) NMVOCs	Yes	
Decision 17/CP.8, annex, paragraph 17	Other gases not controlled by the Montreal Protocol, such as SO <sub>x</sub> , included in the Revised 1996 IPCC Guidelines, may be included at the discretion of the Parties	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 emission factors and activity data. 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, emission factors and activity data used in their estimation of emissions, as appropriate. Parties are encouraged to identify areas where data may be		

<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>
	further improved in future communications through capacity-building:		
	(a) Information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol	Yes	
	(b) Explanation of the sources of emission factors	Yes	
	(c) Explanation of the sources of activity data	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	Colombia does not provide estimates for categories other than those included in the guidelines used (2006 IPCC Guidelines)
	(i) Source and/or sink categories		
	(ii) Methodologies		
	(iii) Emission factors		
	(iv) Activity data		
	(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 24	Non-Annex I Parties are encouraged to provide information on the level of uncertainty associated with inventory data and their underlying assumptions, and to describe the methodologies used, if any, for estimating these uncertainties:		
	(a) Level of uncertainty associated with inventory data	No	Colombia does not provide uncertainty levels associated with inventory data
	(b) Underlying assumptions	No	Colombia does not provide underlying assumptions for uncertainty estimates
	(c) Methodologies used, if any, for estimating these uncertainties	Partly	Colombia provides information on methodologies for uncertainty estimates which are currently under development



*Abbreviations:* AFOLU = agriculture, forestry and other land use, BUR = biennial update report, GHG = greenhouse gas, IPCC = Intergovernmental Panel on Climate Change, IPCC good practice guidance = *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, IPCC good practice guidance for LULUCF = *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, LULUCF = land use, land-use change and forestry, NA = not applicable, NMVOC = non-methane volatile organic compound, Revised 1996 IPCC Guidelines = *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*, 2006 IPCC Guidelines = *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

## 2. Mitigation actions and their effects

13. 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, paragraphs 11–13.

14. Colombia did report on mitigation actions in its first BUR. The information on mitigation actions reported is provided in tabular format.

15. Table 2 presents the results of the identification of the extent to which the elements of information on mitigation actions are included in the first BUR of Colombia in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 2

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

<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 12	For each mitigation action or groups 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 and coverage (i.e. sectors and gases), quantitative goals and progress indicators	Partly	Information on the nature of the actions, as well as gases and sectors is provided for mitigation actions, except for those actions included in tables 3.13-3.15
	(b) Information on methodologies and assumptions:		
	(i) Methodologies	Partly	Methodologies are provided for the mitigation actions presented in tables 3.4–3.8 and a justification is provided as to why methodologies have not yet been developed for the mitigation actions presented in tables 3.3. Methodologies for non-GHG goals are not provided in tables 3.13–3.15
	(ii) Assumptions	Partly	Assumptions are provided for the mitigation actions presented in tables 3.4–3.8

<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 a justification is provided as to why assumptions have not yet been developed for the mitigation actions presented in tables 3.3. Assumptions for mitigation actions with non-GHG goals are not provided in tables and 3.13–3.15
	(c) Information on: Objectives of the action	Yes	
	Steps taken or envisaged to achieve that action	Yes	
	Information on the progress of implementation of the mitigation actions and the underlying steps taken or envisaged, and the results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible:		
	Progress of implementation of the mitigation actions	Yes	
	Progress of implementation of underlying steps taken or envisaged	Yes	
	Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible	Yes	
	(e) Information on international market mechanisms	Yes	
Decision 2/CP.17, annex III, paragraph 13	Parties should provide information on the description of domestic measurement, reporting and verification arrangements	Yes	

**3. Finance, technology and capacity-building needs and support received**

16. 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, paragraphs 14–16.

17. Table 3 below presents results of the identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the BUR of Colombia in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 3  
**Identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the first biennial update report of Colombia**

<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 constraints and gaps, and related financial, technical and capacity-building needs:		
	(a) Constraints and gaps	Yes	
	(b) Related financial, technical and capacity-building needs	Yes	Financial needs are reported but Colombia does not provide a value for them
Decision 2/CP.17, annex III, paragraph 15	Non-Annex I Parties should provide updated information on financial resources, technology transfer, capacity-building and technical support received from the Global Environment Facility, Annex II Parties and other developed country Parties, the Green Climate Fund and multilateral institutions for activities relating to climate change, including for the preparation of the current biennial update report	Yes	
Decision 2/CP.17, annex III, paragraph 16	With regard to the development and transfer of technology, non-Annex I Parties should provide information on technology needs, which must be nationally determined, and technology support received:		
	(a) Technology needs, which must be nationally determined	Yes	
	(b) Technology support received	Partly	Annex 5.1 to the BUR describes support received in terms of financial or technical support received; however technology support received is not explicitly defined.

### C. Technical analysis of the information reported

18. The technical analysis referred to in paragraph 7(b) above aims to increase the transparency of mitigation actions and their effects, without engaging in discussion on the appropriateness of those actions. Accordingly, the technical analysis focused on the transparency of the information reported in the BUR.

19. 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 Intergovernmental Panel on Climate Change (IPCC) and referred to in the UNFCCC reporting guidelines on BURs.

20. 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**

21. As per the scope defined in paragraph 2 of the UNFCCC reporting guidelines on BURs, the BURs should provide an update to the information contained in the most recently submitted national communications, including, among other things, information on national circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis. For their national communications, non-Annex I Parties report on their national circumstances following the reporting guidance contained in decision 17/CP.8, annex, paragraphs 3–5.

22. In accordance with decision 17/CP.8, annex, paragraph 3, Colombia, in its BUR, reported the following information on national circumstances: a description of its national development priorities, objectives and circumstances that may affect its ability to deal with mitigating and adapting to climate change, including information on features of its political and administrative profile, geography, climate, biodiversity, demographics and human development, and economy.

23. As encouraged in decision 17/CP.8, annex, paragraph 4, Colombia provided a summary of relevant information regarding its national circumstances in tabular format. This information transparently describes its national circumstances, in particular the geography, climate, population, education and economy of Colombia. Colombia also provided a summary table of key indicators as well as tables and graphs to illustrate its national circumstances.

24. Colombia described in its BUR the institutional arrangements relevant to the preparation of national communications and BURs on a continuous basis. The description covers key aspects of the institutional arrangements, such as: legal status and roles and responsibilities of the overall coordinating entity; involvement and roles of other institutions and experts; and future improvement plans. The BUR also includes a description of the arrangements for data collection and exchange in the preparation of GHG inventories and the requirements and support needed and received, as well as quality assurance/ quality control (QA/QC) mechanisms for preparation of national communications and reports. Provisions for public consultation and other forms of stakeholder engagement were not provided.

25. During the technical analysis, Colombia clarified to the TTE that it currently does not have the financial resources to guarantee the support of a technical team and therefore reporting on a continuous basis. In regard to the strengthening of institutional arrangements, the Party is currently working on a new climate change policy that defines joint action between institutions and stakeholders as a requirement for successful management of climate change. In line with this policy, climate change legislation that is in the process of formulating grants responsibilities to specific institutions for managing climate change, including actions such as monitoring, reporting of information and the implementation of mitigation and adaptation actions.

26. The information reported transparently describes the institutional arrangements, both existing and planned, of Colombia. The TTE noted that the transparency of future reporting on national circumstances and cross-cutting issues relevant to the preparation of BURs on a continuous basis would be enhanced by including a more detailed description of the institutional arrangements, including how they enable the preparation of BURs and the

support needed for their preparation on a continuous basis, provisions for public consultation and other forms of stakeholder engagement.

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

27. Colombia reported in its BUR information on its national GHG inventory covering GHG emissions and removals for 2010 and 2012 using the *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, *Good Practice Guidance for Land Use, Land-Use Change and Forestry* and *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the 2006 IPCC Guidelines). During the technical analysis, Colombia clarified that 2011 data were not reported because a full data set for the agriculture, forestry and other land use (AFOLU) sector was not available.

28. The total GHG emissions for 2012 presented in the BUR is 178,258 Gg carbon dioxide equivalent (CO<sub>2</sub> eq), excluding forest land. By sector, the emissions are as follows: energy, 44 per cent; AFOLU, 43 per cent; waste, 8 per cent; and industrial processes and product use (IPPU), 5 per cent. In 2010, of a total of 223,949 Gg CO<sub>2</sub> eq, excluding forest land, the share by sector is: AFOLU, 58 per cent; energy, 32 per cent; waste, 6 per cent; and IPPU, 4 per cent. A category analysis within the energy sector showed that the category transport (1A3) was the greatest contributor to the sector, with a share of 38 per cent in 2012, while energy industries (1A1) contributed 23 per cent of emissions in 2012. Within the AFOLU sector, 48 per cent of total emissions were CO<sub>2</sub> emissions generated mostly by the change in carbon stock from changing land use; 30 per cent were methane (CH<sub>4</sub>) emissions mostly from enteric fermentation and manure management from all livestock in the country; and 22 per cent were nitrous oxide (N<sub>2</sub>O) emissions mostly from the management of agricultural soils and manure. The TTE noted that in 2012 the category lands in the AFOLU sector was a net sink as a result of the absorption in forest land remaining forest land (386,992.9 Gg CO<sub>2</sub> eq in 2012).

29. Colombia reported a consistent time series of emissions, using the 2006 IPCC Guidelines. Historical emissions for the years 1990, 1994, 2000 and 2004 are presented, which were recalculated using the 2006 IPCC Guidelines.

30. Colombia reported GHG emissions by category and by gas for CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, hydrofluorocarbons and sulphur hexafluoride. Emissions of perfluorocarbons were not reported. Emissions from product use were reported, except for subcategories 2.F.4 and 2.F.5. Colombia indicates in its BUR that this is because of a lack of data. Emission estimates mainly use a tier 1 approach and are presented transparently in the BUR. The key sources of activity data are reported for each sector. For each sector, drivers of change in emissions between 2010 and 2012 are reported transparently. A key category analysis was performed for the level, not for the trend. During the technical analysis, Colombia indicated that this was because the recalculated historical emissions were prepared at a very late stage in the process, not leaving enough time to perform a trend-based analysis using the historical data. The BUR does not include qualitative or quantitative information on uncertainty, but states that Colombia is currently preparing an uncertainty methodology for its national GHG inventory to be included in the next national communication. The BUR provides information on QC measures for all sectors; and further explains QA measures for the AFOLU and waste sectors. The TTE noted that transparency of reporting would be enhanced by including information on trend-based key category analysis, uncertainty and detailed information on QA procedures for all sectors.

31. Comprehensive summary tables of emission estimates by category and by gas are presented in the BUR (tables 2.5 and 2.6; and tables 2.7 and 2.8 for the category 3B Lands). The TTE noted that in some cases, notation key "IE" is used, without providing a justification where the emissions were included elsewhere (IE). The TTE noted that the

transparency of the information reported would be enhanced by including consistent notation keys where numerical data are not provided and the reasons for reporting “included elsewhere” (“IE”) for removals of category 3B1ai.

32. The TTE commends Colombia for including clear information on methodologies emission factor (EF) and activity data (AD) sources per category, along with a consistent time series.

33. In its BUR, Colombia identifies the lack of data and presents improvement plans for each sector in a transparent manner, and also refers to the progress in MRV of its national GHG inventory. The TTE noted that Colombia presents information on institutions and entities that participate in the compilation of the GHG inventory. Colombia clarified that it is designing a system for the standardization and sustainability of the GHG inventory. Furthermore, the Party mentioned that continuous improvements in data quality are planned.

34. With regard to the energy sector, the BUR provides sources of AD, EFs, tier levels used and emission drivers for the sectoral approach. The BUR indicates that evaporation from vehicles (1A3bv), gas pipelines (1A3ei) and abandoned deep coal mines (1B1Ai3) could not be estimated owing to a lack of data. The inclusion of these emissions in the Party’s next GHG estimates would further enhance the transparency of information presented in the BUR.

35. The BUR provides sources of AD, EFs, tier levels used and emission drivers for industrial process categories. The BUR does not provide emission estimates for aerosols (2F4), solvents (2F5) and manufacture and use of other products owing to a lack of data, as indicated in the BUR. The inclusion of these emissions in the Party’s next GHG estimates would further enhance the transparency of information presented in the BUR. For the estimation of emissions from iron and steel, a methodology from the Revised 1996 IPCC Guidelines was used as a result of a lack of information on furnace technologies.

36. The BUR provides information on sources and references for AD, EFs and other parameters used for the estimates. For enteric fermentation, the BUR indicates the use of a tier 2 approach and presents the parameters used for the estimation of tier 2 EFs. The TTE commends Colombia for presenting this information. The BUR also indicates those categories not estimated, for example the category transition between lands different from natural forests. The inclusion of these emissions in the Party’s next GHG estimates would further enhance the transparency of the information presented in the BUR.

37. The BUR provides sources of AD, EFs, tier levels used and emission drivers for the waste sector. The BUR does not provide emission estimates for the biological treatment of solid waste (category 4B) owing to a lack of data. The inclusion of these emissions in the Party’s next GHG estimates would further enhance the transparency of the information presented in the BUR.

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

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

39. Colombia presents the mitigation actions in chapter 3 of its BUR. The mitigation actions presented are comprehensive and include descriptions of the strategies, sectoral plans, nationally appropriate mitigation actions (NAMAs) (organized by different implementation stage, i.e. identified, under design, formulated and under implementation), REDD-plus activities, projects under the clean development mechanism (CDM), voluntary

market mechanism projects and mitigation actions included in document FCCC/AWGLCA/2011/INF.1. The TTE commends the efforts made by Colombia to provide extensive and detailed information on the different mitigation actions in the country, which enhances the transparency of the information in the BUR.

40. Colombia provides information on the background of climate change mitigation in the country, including a detailed timeline for the years 2000 to 2015. Chapter 3.2 of the BUR provides an introduction to the low carbon development strategy in Colombia: it describes how the strategy was formulated in 2010, the actors involved, the objectives, the components, the steps taken and the results achieved. Chapter 3.2.1 of the BUR provides information on the sectoral mitigation action plans that cover the electric energy, mining, hydrocarbon, transport, waste, housing and territorial development, industry, and agriculture sectors. The sectoral mitigation action plans are described in table 3.2 and they provide information on the objectives, leading institutions and underlying strategy for each sector. The TTE commends Colombia for the detailed breakdown of the history behind mitigation actions, which allows an understanding of how mitigation actions are being formulated, and how these follow the strategy and sectoral mitigation action plans.

41. Colombia presents information on six NAMAs under development in table 3.3 of the BUR, broken down by sector, with the name of the action, status, objective, description, GHGs covered, institutions involved, co-benefits, support received or to be received, and donor institutions. The sectors covered are agriculture, energy, mining, hydrocarbons, transport and industry. Colombia clarified that there is a current need for technical and financial support to formulate and implement these NAMAs. Colombia also clarified that further details on these NAMAs, including quantitative goals, assumptions and methodologies, are not yet available due to the NAMAs being in the early stages of development.

42. Colombia presents information on five NAMAs being formulated or under implementation in tables 3.4 to 3.8 of the BUR. The sectors covered are energy, transport, urban development and waste. The GHGs covered are included for each mitigation action. During the technical analysis, Colombia clarified that NAMAs for the energy sector do not include non-CO<sub>2</sub> gases because these are emitted in small amounts compared with CO<sub>2</sub>, and default EFs for these gases would introduce large uncertainties. The TTE observed that in table 3.8 it is mentioned that the potential emission reductions are being recalculated but no further explanation is provided. The TTE noted that providing a reason for the recalculation of the potential emission reductions would further enhance the transparency of the information presented in the BUR.

43. The time frame for assessing mitigation actions is not presented in the BUR. Colombia clarified during the technical analysis that information on the time frame is dependent on the stage of implementation of the mitigation actions and some NAMAs are still under development. The TTE noted that including the expected time frame (i.e. start and end dates) for assessing mitigation actions and information on how the actions relate to the sectoral and national total emissions would further enhance the transparency of the information presented in the BUR.

44. In chapter 3.3 of the BUR, Colombia provides information on the preparation of the national strategy for REDD-plus and the actions implemented during the preparation phase. Also included is the rate of deforestation by region for the periods 1990–2000, 2000–2005, 2005–2010 and 2010–2012; an analysis of the causes of deforestation; the reference level of forestry emissions; and information on the lifeguard system and forest and carbon monitoring system. The TTE acknowledges the efforts that Colombia has made to provide this information.

45. In chapter 3.5 of the BUR, Colombia provides information on the three mitigation actions included in document FCCC/AWGLCA/2011/INF.1 as voluntary commitments under the Cancun Agreements, which are presented in tables 3.13 to 3.15. The description, objectives and quantitative goals of these mitigation actions are reported as part of the name of each action, not in separate items of the table, as reported in table 3.3 in the BUR and in document FCCC/AWGLCA/2011/INF.1. The TTE identified that providing information on the gases covered would further enhance the transparency of the information presented in the BUR related to the mitigation actions established as voluntary commitments under the Cancun Agreements.

46. The methodologies and assumptions used to assess the mitigation actions are provided only for the mitigation actions presented in tables 3.4 to 3.8 of the BUR. Mitigation actions reported in tables 3.13-3.15 have quantitative goals not related to GHGs, Colombia clarified that GHG emission reductions for those actions will not be estimated and they will be assessed using non-GHG indicators. The methodologies and assumptions for these mitigation actions are presented together. The NAMAs under development (table 3.3) are in an early stage of development; therefore, this information is still being defined. The TTE noted that transparency would be further enhanced by reporting consistently in the different tables presented in the BUR, the methodologies and assumptions related to the mitigation actions.

47. In its BUR, Colombia presents some information on the progress of implementation and the steps taken and envisaged for most mitigation actions; however, the Party subsequently clarified during the technical analysis that additional information on the progress of implementation, the steps taken and envisaged, and the estimated outcomes will be provided once the NAMAs have become operational. In addition, underlying steps taken or envisaged are not provided for the NAMAs under design. Colombia clarified that the NAMAs under design are in an early stage of development; therefore, this information is still being defined.

48. Colombia highlights in chapter 3.4.1 of the BUR that it has 198 projects under the CDM that cover the energy, forestry, industry, waste and transport sectors, and are at various stages of implementation. Colombia highlights that from these 198 projects, 64 are registered under the Executive Board of the CDM. Colombia also highlights that 21 projects issued 9,533,995 certified emission reductions (CERs). Colombia presents additional information on the CDM registered projects and the projects that issued CERs in table 3.11. Information is provided by status (registered or not), CERs issued, number of projects by sector and potential emission reductions in t CO<sub>2</sub> eq. Colombia also provides information on its participation in voluntary market mechanisms under the Verified Carbon Standard (VCS) and the Gold Standard (GS) in table 3.12. Information is provided by type of voluntary market mechanism (i.e. VCS and GS), applicable methodologies, number of registered projects, potential emission reductions in t CO<sub>2</sub> eq, type of project and sector covered (i.e. energy, industry, forestry and waste). The TTE commends Colombia for such detailed description of international market mechanisms.

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

49. Colombia reported that it is advancing in developing various strategies to mitigate and adapt to climate change but that some gaps, barriers and needs still exist. These are identified in the BUR with a view to enhancing the existing capacities, both technical and financial, in the institutions that manage climate change mitigation and adaptation and in the most vulnerable communities, territories and sectors. In particular, Colombia noted that financial resources are critical for the preparation of BURs on a continuous basis, and that methodological and technical gaps related to gathering information and capacity-building



exist at the institutional level. Another constraint indicated by Colombia is the lack of coordination between sectors, institutions and subnational authorities. In regard to the adaptation gaps and constraints, financial resources are needed to implement the national adaptation plan and remove barriers related to public awareness of climate change. Colombia transparently reported updated information on constraints and gaps and related financial, technical and capacity-building needs associated with the preparation of the BURs and the third national communication and the national GHG inventory, as well as associated with mitigation and adaptation. However, the financial needs identified were not monetized and the TTE noted that the association of values with the needs would enhance the transparency of future reporting.

50. In chapter 5.3 of its BUR, Colombia transparently and comprehensively reported updated information for the period 2010–2014 on support received from various sources, both bilateral and multilateral donors, listing the source of the support, the thematic area of cooperation (adaptation, mitigation, REDD-plus or reporting), the support received (in United States dollars) and the number of initiatives. Colombia also reported transparently on the sources of information and the process to gather the data, noting that a cross-checking was done in order to avoid double counting and to promote consistency. As reported in its BUR, the Party found discrepancies in the data reported from different sources and donors, mainly on project status, date of development and financial support received from donors due to the fact that data was recorded at different stages of the process (formulation, approval, execution and finalization). Colombia did not differentiate in its BUR how much of the support addresses capacity-building and how much addresses technology transfer. Colombia clarified that annex 5.1 to its BUR reports all the support received, including technology transfer. The TTE noted that reporting consistently the type of support received (in terms of financial, capacity-building and/technology transfer) would further enhance the transparency of future reporting. During the technical analysis, Colombia clarified that the Government of Colombia enacted, in the beginning of 2016, a law creating a national system of climate change (*Sistema Nacional de Cambio Climático*, SISCLIMA in Spanish) and this new institutional arrangement could facilitate reporting, on a continuous basis, of support needed and received.

51. The TTE acknowledges the effort made by Colombia to report on constraints and gaps, and related financial, technical and capacity-building needs, as well as on financial resources, technology transfer, capacity-building and technical support received (including information on technology needs, which must be nationally determined, and on technology support received). The TTE considers the reporting to be transparent.

## 5. Domestic measurement, reporting and verification

52. Colombia presents information related to MRV in various chapters of the BUR, in different formats and with a variable level of detail, depending on the type and stage of the mitigation action. Colombia provides information on the MRV arrangements of the following types of mitigation actions:

- (a) Sectoral mitigation action plans;
- (b) Mitigation actions under Colombia's low carbon development strategy;
- (c) NAMAs under design, formulated or being implemented;
- (d) Projects under the CDM;
- (e) Projects under voluntary market mechanisms.

53. Colombia presents detailed and comprehensive information in chapter 4 of the BUR on the work undertaken in designing and establishing MRV. Colombia has been working extensively on developing a national emission reductions registry to collect data on

mitigation actions in Colombia. The Party is also working on programmes and projects to support the MRV related to REDD-plus. Table 4.1 in the BUR provides examples of the sectoral information systems in Colombia, and the coordinating entity involved for each sector. Chapter 4.1 provides information on how Colombia is designing, developing and implementing MRV for GHG emissions and mitigation actions. Colombia is developing MRV for local and regional GHG inventories. The cities of Montería, Manizales, Barranquilla and Bogotá, among others, have compiled a GHG inventory and Colombia highlights the development of a methodology to support other cities in developing city-level GHG inventories. During the technical analysis, Colombia mentioned that it is working with various institutions to develop and implement a system to track and monitor sectoral mitigation action plans and mitigation actions, in line with the national low carbon development strategy (*Estrategia Colombiana de desarrollo bajo en carbono*, ECDBC). Within the system, a climate change module will be designed to make a spatial representation of all the mitigation and adaptation actions in the country, with the objective to detect double counting or interactions between mitigation actions. Colombia is also working on a framework for a national voluntary reporting programme that aims to support institutions and companies in estimating and reporting their GHG emissions, which will further enhance the identification of mitigation actions in line with the low carbon development strategy. The TTE acknowledges the efforts made by Colombia in MRV and commends the Party for providing this information, which enhances the transparency of its BUR.

54. For sectoral mitigation action plans and NAMAs being formulated, Colombia presents information on the methodology and entities involved in MRV, and states that it is working on ways to obtain data for MRV in a systematic manner. For NAMAs at the initial stage of implementation (tables 3.4 to 3.8 of the BUR), the Party also includes objectives, indicators and entities involved in MRV.

55. Regarding the MRV arrangement for mitigation action, the BUR does not contain information on the roles and responsibilities of the entities involved. The BUR also does not contain information on the arrangements planned or in place regarding mitigation action measures, including the collection and management of relevant and available data and the documentation of methodologies. During the technical analysis, Colombia clarified that it is working on assigning roles and responsibilities for the key institutions identified for most NAMAs and the whole MRV system is yet to be finalized. As clarified by the Party, the complete definition of roles, responsibilities and arrangements will be included in the MRV system.

56. Colombia presents partial information on MRV related to REDD-plus, as only information on the system for the carbon and forestry component is included. Colombia does not present information related to MRV of mitigation actions under the Cancun Agreements. Colombia clarified that the main MRV instrument for monitoring the results achieved on avoiding deforestation is the monitoring system for forestry; other REDD-plus actions and projects will be monitored by the emission reduction registry currently under development.

57. Colombia provides information on progress made in the design of MRV arrangements, and clarifies the objective of the future domestic MRV arrangements.

58. During the technical analysis, Colombia clarified that it is in the process of identifying systems, establishing institutional arrangements and defining data collection and data management for MRV of mitigation actions. The TTE noted that the transparency of the BUR could be further enhanced by providing information on the progress made in MRV arrangements.

## D. Identification of capacity-building needs

59. In consultation with Colombia, the TTE identified the following capacity-building needs related to the facilitation of the preparation of the subsequent BURs and participation in ICA:

- (a) Methodologies and guidelines that allow clarification of capacity-building and training needs, considering the achievements of the country to date;
- (b) A regular training programme to build and develop the capacities of specialists in ministries, agencies, and local and regional institutions which are involved in the preparation of BURs;
- (c) An increase in the ownership and understanding of methodological guidelines by data providers so as to ensure efficient generation and collection processes;
- (d) GHG estimates for categories not reported in the first BUR (e.g. transitions in non-forest lands);
- (e) Development of the mitigation and adaptation actions currently under design;
- (f) Implementation of the NAMAs formulated;
- (g) Sectoral data collection and management systems to support the assessment of mitigation actions;
- (h) Development of MRV arrangements for GHG inventories at the national, regional, city and firm levels, for mitigation actions and related to REDD-plus;
- (i) Identification and assessment of the interactions between mitigation actions, and support of the climate change module of MRV;
- (j) Institutional arrangements for the MRV of mitigation actions, to assist information flow at the local, regional and national levels;
- (k) Registration and periodical reporting on all mitigation actions to the national emission reductions registry;
- (l) Efficient financial mechanisms to support NAMAs and other mitigation actions;
- (m) Data collection and analysis for national and sectoral reporting, and the identification of gaps in interoperability between systems, real-time transfer of data, quality data collection and analysis processes, and collaborative work in the collation of information for the preparation of the BURs;
- (n) Development and implementation of a system to identify areas of support (financing, technology transfer and capacity-building), in the thematic areas of adaptation, mitigation, REDD-plus and reporting;
- (o) Determination of the cost of technology, and the capacity to adapt the technology to local conditions or to develop new technologies for the national context.

## III. Conclusions

60. The TTE concludes that:

- (a) Most of the elements of information listed in paragraph 3(a) of the ICA modalities and guidelines have been included in the first BUR of Colombia, and those that have not been included or are partly included (e.g. MRV systems and uncertainty analysis)

are currently under development and are planned to be included in the forthcoming national communication;

(b) The TTE noted that the information on institutional arrangements was reported transparently as it describes the existing and planned arrangements in Colombia and that the transparency of future reporting on national circumstances and cross-cutting issues relevant to the preparation of BURs on a continuous basis would be further enhanced by including a more detailed description of the institutional arrangements and how they enable the preparation of BURs as well as the support needed for their preparation on a continuous basis, provisions for public consultation and other forms of stakeholder engagement;

(c) The TTE acknowledges the effort made by Colombia to present a complete GHG inventory and a consistent time series. The GHG inventory covers most of the categories and gases for which GHG emissions and removals occur in Colombia. The TTE commends Colombia on the comprehensive and transparent format chosen to provide the information, and the Party's inclusion of information on gaps, categories not estimated and planned improvements for each sector. The information provided is in line with the provisions of the reporting guidelines;

(d) In its BUR, Colombia comprehensively described the mitigation actions under design, under implementation or implemented, and the TTE acknowledges the effort Colombia made to provide this information. The types of mitigation actions presented are: those under Colombia's low carbon development strategy, sectoral mitigation action plans, NAMAs, projects under the CDM, projects under voluntary market mechanisms, and the mitigation actions included in the Cancun Agreements. Colombia is still working on the design of NAMAs and is in the process of identifying methodologies and assumptions to assess the mitigation actions. The transparency of reporting would be further enhanced in some cases by providing additional information such as the time frame of the mitigation actions and the steps envisaged;

(e) The TTE commends Colombia for its broad reporting on domestic arrangements for MRV of mitigation actions, and acknowledges, following further clarification from Colombia, that the level of detail in the information provided on the MRV arrangements varies depending on the design and implementation stage of the mitigation action;

(f) The TTE acknowledges the effort made by Colombia to report on constraints and gaps, and related financial, technical and capacity-building needs, as well as on financial resources, technology transfer, capacity-building and technical support received (including information on technology needs, which must be nationally determined, and on technology support received) and considers the reporting transparent.

61. The TTE, in consultation with Colombia, identified two key 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. Colombia further identified the following as the priority capacity-building needs:

(a) Institutional arrangements for the MRV of mitigation actions in order to assist information flow at the local, regional and national levels;

(b) Development and implementation of a system to identify different areas of support (financing, technology transfer and capacity-building), in the thematic areas of adaptation, mitigation, REDD-plus and reporting.

## Annex

### **Documents and information used during the technical analysis**

#### **Reference documents**

“Composition, modalities and procedures of the team of technical experts for undertaking the technical analysis of biennial update reports from Parties not included in Annex I to the Convention”. Annex to decision 20/CP.19. Available at <<http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=12>>.

“Modalities and guidelines for international consultation and analysis”. Annex IV to decision 2/CP.17. Available at <<http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>>.

“UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention”. Annex III to decision 2/CP.17. Available at <<http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>>.

“Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention”. Annex to decision 17/CP.8. Available at <<http://unfccc.int/resource/docs/cop8/07a02.pdf#page=2>>.

First biennial update report of Colombia. Available at <<http://unfccc.int/8722.php>>.

First and second national communication of Colombia. Available at <[http://unfccc.int/national\\_reports/non-annex\\_i\\_natcom/items/2979.php](http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php)>.

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