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Technical analysis of the first biennial update report of Indonesia submitted on 18 March 2016

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

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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 Indonesia 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. Indonesia submitted its first BUR on 18 March 2016.

4. The technical analysis of the BUR took place from 13 to 17 June 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. Ayité-Lô Ajavon (former member of the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention from Togo), Ms. Rana Humbatova (Azerbaijan), Ms. Valentina Idrisova (Kazakhstan), Ms. Sarah Kuen (Belgium) and Ms. Gherghita Nicodim (Romania). Mr. Ajavon and Ms. Nicodim were the co-leads. Mr. Siddhartha Nauduri (secretariat) coordinated the technical analysis.

5. During the technical analysis, in addition to the written exchange, through the secretariat, to provide technical clarifications on the information reported in the BUR, the TTE and Indonesia engaged in consultation via videoconferencing on the identification of capacity-building needs for the preparation of BURs and participation in the ICA process. Following the technical analysis of the BUR, the TTE prepared and shared a draft summary report with Indonesia on 13 September 2016 for its review and comment. Indonesia, in turn, provided its feedback on the draft summary report on 13 December 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 Indonesia on 21 February 2017.

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 these actions, increase the transparency of mitigation actions and their effects, and shall entail the following:

(a) The identification of the extent to which the elements of information listed in paragraph 3(a) of the ICA modalities and guidelines (decision 2/CP.17, annex IV) have been included in the BUR of the Party concerned (see 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 Indonesia'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 on 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 the results of the identification of the extent to which the elements of information on GHGs are included in the first BUR of Indonesia 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 Indonesia

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No/NA*	*Comments on the extent of the information provided*
Decision 2/CP.17, paragraph 41(g)	The first BUR shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, or more recent years if information is available	Yes	
Decision 2/CP.17, annex III, paragraph 4	Non-Annex I Parties should use the methodologies established by the latest UNFCCC guidelines for the preparation of national communications from non-Annex I Parties approved by COP or those determined by any future decision of the COP on this matter	Yes	The 2006 IPCC Guidelines were used to prepare the GHG inventory
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	Indonesia used the 2006 IPCC Guidelines to prepare its GHG inventory but reported the results in accordance with the Revised 1996 IPCC Guidelines
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:		
	(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	Partly	Indonesia used the 2006 IPCC Guidelines to prepare its inventory; however, the summary table was reported in a format consistent with the

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No/NA*	*Comments on the extent of the information provided*
	and greenhouse gas precursors)		Revised 1996 IPCC Guidelines (table 2-4 of the BUR) The information reported on GHG emissions covered only CO_2, CH_4, N_2O, CO, NOx for emissions under the energy, industrial processes and product use, AFOLU and waste sectors. Information on some categories was not reported in the BUR (e.g. international aviation and marine bunker fuels)
	(b) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF_6)	Partly	Indonesia used the 2006 IPCC Guidelines to prepare its inventory but the summary table was reported in a format consistent with the Revised 1996 IPCC Guidelines format (table 2-5 of the BUR). Information was reported only partially for PFCs
Decision 2/CP.17, annex III, paragraph 6	Non-Annex I Parties are encouraged to include, as appropriate and to the extent that capacities permit, in the inventory section of the BUR:		
	(a) Tables included in annex 3A.2 to chapter 3 of the IPCC good practice guidance for LULUCF	Partly	The 2006 IPCC Guidelines were used to prepare the GHG inventory and therefore these tables were not reported; comparable information was reported in table 2-24 of the BUR. CO_2 emissions from the LULUCF sector were reported, but the BUR did not include emissions of CH_4, N_2O and other gases for this sector
	(b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines	Partly	The 2006 IPCC Guidelines were used to prepare the GHG inventory and therefore these tables were not reported. Comparable information was reported in tables 2-6, 2-11 and 2-38 of the BUR; however, information such as the different types of transportation (aviation, navigation, road transport or railway), was not reported
Decision	Each non-Annex I Party is	Yes	The information reported

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No/NA*	*Comments on the extent of the information provided*
2/CP.17, annex III, paragraph 7	encouraged to provide a consistent time series back to the years reported in the previous national communications		covers the period 2000–2012
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	
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_2	Yes	
	(b) CH_4	Yes	
	(c) N_2O	Yes	
Decision 17/CP.8, annex, paragraph 15	Non-Annex I Parties are encouraged, as appropriate, to provide information on anthropogenic emissions by sources of HFCs, PFCs and SF_6	Yes	The source of PFCs emissions was reported in table 2-5 of the BUR
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:	Yes	The information was reported based on the 2006 IPCC Guidelines and was included as part of the energy sector, under fuel combustion for transportation; GHG emissions for the energy sector were estimated using aggregate data; therefore, Indonesia was

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No/NA*	*Comments on the extent of the information provided*
			unable to estimate bunker fuels and as such, reported with the notation key "NE"
	(a) International aviation		
	(b) Marine bunker fuels		
Decision 17/CP.8, annex, paragraph 16	Non-Annex I Parties are encouraged, as appropriate, to report on anthropogenic emissions by sources of other GHGs, such as:		
	(a) CO	Partly	Emissions were reported for agriculture only; the notation key "NE" was reported for the other sectors
	(b) NO_x	Partly	Emissions were reported for agriculture only; the notation keys "NE" and "NO" were reported for the other sectors
	(c) NMVOCs	No	The notation key "NE" was reported for all sectors
Decision 17/CP.8, annex, paragraph 17	Other gases not controlled by the Montreal Protocol, such as SOx, included in the Revised 1996 IPCC Guidelines may be included at the discretion of the Parties	No	The notation keys "NE" and "NO" were reported for some sectors
Decision 17/CP.8, annex, paragraph 18	Non-Annex I Parties are encouraged, to the extent possible, and if disaggregated data are available, to estimate and report CO_2 fuel combustion emissions using both the sectoral and the reference approaches, and to explain any large differences between the two approaches	Yes	Indonesia reported information on CO_2 emissions estimated by using the reference approach and indicated why the results obtained using the sectoral approach were higher than those obtained using the reference approach
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		

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No/NA*	*Comments on the extent of the information provided*
	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 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:	No	
	(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	Indonesia provided information on its capacity-building needs for the GHG inventory in chapter 4.1 of its BUR
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:	Yes	
	(a) Level of uncertainty associated with inventory data	Partly	Information was reported for an uncertainty analysis in chapter 2.6 of the BUR. However, only overall uncertainty of the activity data

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No/NA*	*Comments on the extent of the information provided*
			and emission factors for the activity categories of the inventory were reported
	(b) Underlying assumptions	Partly	Assumptions were reported only for overall uncertainty reduction
	(c) Methodologies used, if any, for estimating these uncertainties	Yes	

Abbreviations: AFOLU = agriculture, forestry and land use, BUR = biennial update report, COP = Conference of the Parties, 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, NE = not estimated, NMVOC = non-methane volatile organic compound, NO = not occurring, 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 of the UNFCCC reporting guidelines on BURs.

14. Indonesia reported on mitigation actions in its first BUR. The information on the 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 Indonesia 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 Indonesia

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
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, coverage (i.e. sectors and gases), quantitative goals and progress indicators	Partly	Information on the progress indicators and gases covered for the mitigation actions was not reported in the tables in annex B and information was provided in the biennial update report on the gases covered only for the agriculture, industrial processes and product use and waste sectors

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
	(b) Information on:	Partly	Information on methodologies and assumptions was reported for most mitigation actions but not for all actions
	(i) Methodologies		
	(ii) Assumptions		
	(c) Information on:	Partly	The information reported on mitigation actions covers objectives, but not steps taken for all actions
	(i) Objectives of the action		
	(ii) Steps taken or envisaged to achieve that action		
	(d) 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:		
	(i) Progress of implementation of the mitigation actions	Partly	This information was not reported for all mitigation actions
	(ii) Progress of implementation of the underlying steps taken or envisaged	Yes	
	(iii) Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible	Partly	Information on results achieved was not reported for all mitigation actions
	(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, of the UNFCCC reporting guidelines on BURs.

17. Table 3 presents the 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 Indonesia 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 Indonesia

Decision	*Provision of the reporting requirements*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex III, paragraph 14	Non-Annex I Parties should provide updated information on constraints and gaps, and related financial, technical and capacity-building needs:	Yes	
	(a) Constraints and gaps	Yes	
	(b) Related financial, technical and capacity-building needs	Yes	
Decision 2/CP.17, annex III, paragraph 15	Non-Annex I Parties should provide 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	The information reported focuses mainly on the support received for nationally appropriate mitigation actions and capacity-building activities. The information is disaggregated by support provider and type of support in tables 4-5 and 4-6
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	Partly	This information is included with the financial needs for three main sectors: energy, waste and agriculture, forestry and other land use
	(b) Technology support received	Partly	This information is not clearly reported

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 BUR 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, Indonesia, in its BUR, reported the following information on its national circumstances: geographical, climatic, demographic and political information; economic and social development information (macroeconomic indicators and relative contributions of sectors to the overall economy); national, sectoral and regional development priorities and objectives, including national cross-cutting policies; and the climate policy framework, with its current institutional structure for implementation.

23. Indonesia provided figures, graphs and tables to illustrate most of the reported elements. This information adequately describes the national circumstances, in particular the biophysical, demographic, political and economic features of Indonesia. Indonesia also provided information and statistics on economic and social development, and sectoral information covering the energy, industry, forestry, agriculture, water, and coastal and marine sectors.

24. As indicated in Indonesia's BUR, under the national institutional arrangements the Ministry of Environment, led by the Deputy Minister for Control of Environmental Degradation and Climate Change, has the mandate to coordinate the preparation of national communications and BURs by consolidating all data and information in close cooperation with sectoral working groups on climate change (chapter 3.2.3.). The Ministry of Environment, through the national climate change focal point, the National Council for Climate Change, submitted its second national communication to the secretariat.

25. The BUR indicates that, with a view to facilitating better coordination in consolidating data and information, four working groups with representation from relevant ministries as members were established. Each working group was chaired by a director on: adaptation; mitigation; GHG inventory preparation; and national circumstances and means of implementation. Indonesia further mentioned that the details of this institutional arrangement for the preparation of national communications and BURs on a continuous basis will be reported in its third national communication.

26. The following institutional arrangements were transparently reported in chapter 3.5 of Indonesia's BUR: its National Action Plan for the Reduction of Greenhouse Gas Emissions; Implementation of Greenhouse Gas and Measurement, Reporting and Verification of Mitigation Actions (procedures described in chapter 3.5.1 and further illustrated in figures 3.7. and 3.8); and the different instruments being developed to ensure the accuracy, consistency, transparency and quality of verification results. Indonesia also demonstrated that the arrangements are able to meet the requirements for the preparation of national communications and BURs on a continuous basis.

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

27. As indicated in table 1 above, Indonesia reported in its BUR information on its GHG inventory, in accordance with paragraphs 3–10 of the UNFCCC reporting guidelines on BURs and 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.

28. Indonesia reported in its BUR information on its national GHG inventories covering GHG emissions by sources and removals by sinks for the years 2000 and 2012 using tier 1 and tier 2 methods from the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the 2006 IPCC Guidelines) and the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* (hereinafter referred to as the Wetlands Supplement). Indonesia also reported estimates of GHG emissions and removals for the above-mentioned years, the sectoral level GHG emissions for the period 2000–2012 and summary tables as per the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the Revised 1996 IPCC Guidelines). The TTE recognizes and commends Indonesia for its efforts to use the 2006 IPCC Guidelines in the BUR and the other information, to increase the transparency of reporting in the BUR.

29. Indonesia has a Presidential Regulation 71/2011 on the implementation of the national GHG inventory, which mandates all sectors and local governments under the coordination of the Ministry of Environment to develop annual reports on the implementation of the GHG inventory, which are forwarded to the Coordinating Minister for People's Welfare. Indonesia has set in place other institutional arrangements, supported by decrees, to prepare its national GHG inventory. The TTE commends Indonesia for including a plan to improve the data collection mechanism and its intention to involve subnational governments and for identifying the need to use both top-down and bottom-up approaches to compare the GHG emissions.

30. For 2012, aggregate emissions of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) excluding land use, land-use change and forestry (LULUCF) and peat fires amounted to 758,979 Gg CO_2 equivalent (eq), while aggregate emissions of CO_2, CH_4 and N_2O including LULUCF and peat fires amounted to 1,453,957 Gg CO_2 eq. The information reported in the BUR, indicates the main contributing sources to be LULUCF and peat fires (47.8 per cent) followed by the energy sector (34.9 per cent), the agriculture sector (7.8 per cent), the waste sector (6.7 per cent) and the industrial processes and product use (IPPU) sector (2.8 per cent). The most significant emissions, by gas, are CO_2 with a share of 84.1 per cent, followed by CH_4 with 11.9 per cent and N_2O with 4.1 per cent.

31. Indonesia used the 2006 IPCC Guidelines to estimate its emissions, but reported the summary tables in accordance with the format contained in the Revised 1996 IPCC Guidelines. During the technical analysis, Indonesia clarified that it had mapped and allocated emissions using the format prescribed by the reporting tables of the Revised 1996 IPCC Guidelines, in line with decision 2/CP.17, annex III, paragraph 9. The TTE notes that the transparency of the reporting of information on GHG inventories could be improved by ensuring consistent use of methodologies for both the estimation and the reporting of GHG emissions.

32. Decision 17/CP.8, annex, paragraph 15, encourages non-Annex I Parties, as appropriate, to provide information on anthropogenic emissions by sources of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). However, no information on HFCs was reported in the BUR. PFC emissions were estimated for the aluminium industry only; during the technical analysis Indonesia indicated that HFC emissions may be included in future inventories when the mechanism

for collecting data has been established and if the emission sources of this group of fluorinated gases (F-gases) are considered to be significant enough. The TTE welcomes the intention of Indonesia to collect the F-gases activity data, noting that it would enhance the transparency of reporting in future GHG inventories.

33. Information on SF_6 was reported in BUR table 2-5 as "NE" (not estimated), under the 1.A.1 (energy production) category. This allocation is not in accordance with the Revised 1996 IPCC Guidelines. During the technical analysis, Indonesia clarified that it had identified electrical breakers used in the electricity transmission and distribution systems as the principal source of SF_6 emissions, and consequently had allocated emissions under that category. Indonesia also explained that the data for the use of such electrical breakers were not available, and hence SF_6 emissions were reported as "NE". However, in accordance with the Revised 1996 IPCC Guidelines, this category is allocated under the IPPU sector (category 2.G.1, electrical equipment). The TTE notes that, the transparency of future GHG inventories would be enhanced by collecting the activity data and reporting the SF_6 emissions from the above-mentioned activity category, together with the allocation in line with the Revised 1996 IPCC Guidelines.

34. Consistent with decision 17/CP.8, annex, paragraph 24, Indonesia has reported the results of its uncertainty analysis by providing the global uncertainty of the GHG inventory. However, the information on underlying assumptions for data and information used in determining uncertainty for all sectors was not completely presented in the BUR. During the technical analysis, Indonesia provided comprehensive information about the methodology used to estimate the uncertainty for the emission factors and activity data. The uncertainty values for the activity data and emission factors are based on IPCC default values and a tier 1 methodology and on expert judgment. The country-specific uncertainty values are based on the information collected from the suppliers of the activity data.

35. The uncertainty values for the cement, aluminium and nitric acid production activities in the IPPU sector are derived from the clean development mechanism (CDM) projects information; the uncertainty data of the changes in forest and other woody biomass stocks, forest and grassland conversion are collected from national forest monitoring systems; the uncertainty data on rice cultivation are derived from the research reports. The TTE notes that future BURs would be more transparent by including information on how the uncertainty values of the activity data and emission factors were determined in the development of the GHG inventory.

36. In accordance with decision 17/CP.8, annex, paragraph 16, non-Annex I Parties are encouraged to report on anthropogenic emissions by sources of GHGs such as carbon monoxide (CO), nitrogen oxides (NO_X) and non-methane volatile organic compounds (NMVOCs), and according to decision 17/CP.8, annex, paragraph 17, other gases not controlled by the Montreal Protocol, such as sulphur dioxide (SO_2), may be included at the discretion of the Parties. Indonesia did not report emission estimates of the indirect GHGs and SO_2 in the summary tables. However, in the sectoral tables, CO and NO_X emissions from the agriculture sector were reported for the period 2000–2012. As the default emission factors are available for other sectors (e.g. energy, IPPU), the TTE notes that the transparency of future GHG inventories could be further improved by estimating and reporting emissions of CO, NO_X, NMVOCs and SO_2 from other sectors as well.

37. Indonesia reported total GHG emissions of 508,120 Gg CO_2 eq from the energy sector. The key category analysis reported by the Party identified the main activity of the sector as electricity and heat production, contributing 34.42 per cent of total GHG emissions from this sector. The information reported in the BUR indicates that for the energy sector the activity data for the entire time series were collected from the energy balance. Indonesia provided revised information on GHG emissions in the BUR, which is an update of the information reported in its second national communication, for the period

2000–2005 based on updated activity data, while for the period 2006–2012 current activity data were used.

38. As stated in the BUR, Indonesia is preparing national calorific values for the energy sector that will be used in the estimates to be reported in the second BUR. The TTE commends the Party for this activity since it represents an important step to having a more refined approach to the emission estimation in the energy sector.

39. Indonesia reported energy consumption associated with upstream oil and gas activities in the 1.A.1.b (petroleum refining) category instead of 1.A.1.c.ii (other energy industries). During the technical analysis, Indonesia stated that an improved system for collecting activity data is being planned for the second BUR and the results will be reported in the corresponding category in line with the Revised 1996 IPCC Guidelines.

40. For sectors other than the energy sector, Indonesia reported aggregated data for energy consumption in categories such as agriculture, construction and mining, which is not in line with the allocation of these activities provided in the IPCC methodologies. Indonesia stated that the energy consumption data in the energy balance for this type of activity are aggregated and a new mechanism for data collection needs to be put in place, indicating a capacity-building need in this area. The TTE notes that a disaggregation of this type of energy consumption would increase the transparency of the future GHG inventories.

41. Indonesia reported biomass used as fuel only as a memo item, with the CH_4 and N_2O emissions from biomass burning not being accounted in the total inventory. According to the Revised 1996 IPCC Guidelines, CH_4 and N_2O emissions from biomass combustion are accounted for in the GHG inventory. The TTE notes that the transparency of future GHG inventories will be enhanced if the Party takes into account these types of emissions in the activities.

42. As per decision 17/CP.8, annex, paragraph 19, non-Annex I Parties should report emissions from international aviation and marine bunker fuels separately in their inventories. Indonesia, however, reported that these emissions were not estimated. During the technical analysis, Indonesia clarified that data for aviation and maritime bunker fuels were not estimated, as disaggregated data were not available, and that it plans to collect such data in the future. The TTE notes that including this information in the BUR would enhance the transparency of reporting.

43. Indonesia estimated and reported GHG emissions from fuel combustion by using both the sectoral and the reference approaches, and explained the differences between these two approaches, in accordance with decision 17/CP.8, annex, paragraph 18. Estimates of GHG emissions using the sectoral approach were noted to be higher than those resulting from the use of the reference approach. During the technical analysis, Indonesia clarified that the reference approach covered only CO_2 emissions while the sectoral approach included CO_2, CH_4 and N_2O emissions. The TTE notes that comparing CO_2 emissions calculated using the reference approach with CO_2, CH_4 and N_2O emissions using the sectoral approach was not consistent with IPCC methodologies, which indicate that the comparison should be undertaken only for CO_2. The TTE further notes that this comparison is an important verification method in the energy sector, and future GHG inventories from Indonesia could benefit from this exercise being carried out in line with the methodological provisions.

44. Indonesia reported GHG emissions from eight main categories of industrial activities under the IPPU sector, with a total of 41,062 Gg CO_2 eq; however, only emissions from five of these were estimated: mineral industry; chemical industry; metal industry; non-energy products from fuels; and others. The gases covered are: CO_2, CH_4, N_2O, HFCs, PFCs and SF_6. Indonesia used tier 1 methods from the 2006 IPCC Guidelines and used

default emission factors except for clinker production and aluminium industries implemented after June 2010.

45. The information reported in the BUR indicates GHG emissions from the IPPU sector for the time series of 2000–2012, with updated activity data for the period 2000–2005; this information is an update to the information reported in the second national communication and current activity data for the period 2006–2012. Indonesia listed the data and information sources used to calculate the GHG emissions for each of the eight categories of industrial activities reported. The key sources of GHG emissions from this sector were cement production at 52 per cent and ammonia industries at 17.5 per cent of the emissions. Statistical and third-party data were the sources of activity data, while default emission factors from the 2006 IPCC Guidelines were used to determine the GHG emissions for the IPPU sector.

46. In line with decision 17/CP.8, annex, paragraph 10, which encourages non-Annex I Parties to use country-specific values, Indonesia used plant-specific data to estimate emissions from cement (clinker production) and aluminium industries, but did not provide the source of information on emission factors. During the technical analysis, Indonesia shared the corresponding emission factors and a comparison with the default values, and documented the values by providing the web link to the corresponding CDM reports. The TTE welcomes the information shared by the Party and notes that the inclusion of these elements would enhance the transparency of future GHG inventories.

47. The GHG emissions from the agriculture, forestry and other land use sector, covering livestock, land and aggregate sources and non-CO_2 emission sources on land, for 2012 were reported to be 116,189 Gg CO_2 eq. The BUR provides activity data, an explanation of methodologies and data sources. Indonesia introduced a national scaling factor for soils. The Party used a tier 2 approach and country-specific emission actors to estimate CH_4 emissions from rice cultivation. Further, the Ministry of Agriculture, the main source of data in the sector, is preparing local emission factors and livestock mapping to move to a tier 2 approach in estimating emissions from livestock. The TTE noted that the transparency of reporting could be further enhanced by reporting a description of national agricultural practices.

48. Indonesia reported information on forest and land use, peat decomposition and peat fires. The GHG emissions from the LULUCF sector were reported to be 694,978 Gg CO_2 eq for 2012. The Party used country-specific factors for various land categories (e.g. growth rates, carbon stock). For peat decomposition, the methodology was taken from the Wetlands Supplement. The TTE commends Indonesia for a planned further improvement, namely the Ministry of Environment and Forestry's plans to provide a land-cover map on an annual basis derived from satellite data using medium and high resolutions. TTE commends Indonesia for its efforts to produce a transparent GHG inventory.

49. GHG emissions from the waste sector were reported to be 97,117 Gg CO_2 eq. The TTE noted that in its first BUR Indonesia improved the coverage of GHG emissions from the waste sector by including activities such as industrial solid waste treatment; this information is an update to the information reported in the second national communication. The main source of GHG emissions from the waste sector was waste treatment activities, which are: municipal solid waste treatment in solid waste disposal sites or landfill; biological treatment/composting units; open burning sites and incinerators; domestic liquid waste treatment; industrial wastewater treatment; and industrial solid waste treatment. However, Indonesia reported that there is an improvement needed in data collection for the waste treatment activities (e.g. industrial solid waste, including sludge from wastewater treatment plants, clinical waste, hazardous waste).

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

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

51. Indonesia reported extensive information on its mitigation actions, which are categorized in the context of the nature of the action: "goal-based actions" and "non-goal-based actions". The goal-based actions are those mitigation actions that are implemented within the framework to achieve a certain national target of GHG emission reductions, whereas the non-goal-based actions are not intended to meet a national target, but are undertaken as credited actions or on a voluntary basis. The goal-based mitigation actions can be implemented in the form of policy measures or in the form of project activities, but the non-goal-based actions are mostly mitigation project activities, although some are implemented in the form of policy measures.

52. These two categories of actions are grouped according to the level/scope of implementation, source of funding and the method of measurement. Regarding the level/scope of implementation, the mitigation actions are categorized as national, sectoral, regional or organization/company, each of which are assessed against different GHG emission baselines. As they relate to the source of funding, the mitigation actions are classified as unilateral, supported and credited (carbon market) mechanisms. Unilateral actions are implemented using the domestic budget, while the other two are implemented using international support, all of which will claim the GHG emission reductions. In terms of the approach to measurement, this occurs either through quantitative or qualitative measures; however, most are assessed using quantitative approaches, which applies 'business as usual' (BAU) or intensity targets as indicators of measurement.

53. The information reported on mitigation actions is mostly transparent, and covers Indonesia's emission reduction target, baseline emissions and detailed information on national mitigation actions. In 2009, the President of Indonesia pledged to reduce the GHG emission level to 26 per cent below BAU by 2020 (0.767 Gt CO_2 eq) using the domestic budget and to 41 per cent below BAU with international support (1.189 Gt CO_2 eq). During the technical analysis, Indonesia stated that the unit, carbon dioxide equivalent (CO_2 eq), was used to facilitate better comparison between the quantitative effects of different mitigation actions.

54. Following this announcement, the Government of Indonesia issued a Presidential Regulation 61/2011, concerning a national action plan for the mitigation of GHG emissions, which provides details of sectoral mitigation action plans, and is intended to meet the national GHG emission reduction target.

55. Indonesia reported that more than 50 mitigation actions are planned under Regulation 61/2011. To achieve this mitigation goal highlighted by the Party, mitigation actions are allocated to six sectors: forestry and peatland; waste; energy; transport; agriculture; and industry. Mitigation actions targeting the forestry and peatland sector are estimated to contribute the most, with 672 Gg CO_2 eq, followed by the waste sector at 48 Gg CO_2 eq and the energy and transport sector at 38 Gg CO_2 eq; these calculations were based on each sector's contribution to the overall GHG emission reduction potential. The BUR indicated that Regulation 61/2011 also required local governments at the provincial level to develop local action plans, based on the national planning and development priorities. Except for the province of Jakarta, whose target of a 30 per cent reduction by 2020, which is higher than the national target, most provinces followed the national target of 26 per cent and 41 per cent.

56. Indonesia reported that the total emission reduction target was determined, according to Regulation 61/2011, on the basis of the GHG emission baseline (BAU) reported in Indonesia's second national communication. The TTE recognizes the efforts made by the Party to establish targets for each mitigation action, whether policy-based or project-based, as this information is beyond the reporting requirements for non-Annex I Parties. However, the BUR indicates that there is no specific methodology to estimate GHG reduction potential from policy-based actions. Further, while baselines are provided for each sector, following Regulation 61/2011, they were revised for the waste and agriculture sectors, and revisions for the energy and transport and IPPU sectors are still under way. Therefore, the baselines for these sectors are the same as those reported in Indonesia's second national communication. The BUR further indicates that the second BUR and third national communication will incorporate updated baselines that may use dynamic modelling.

57. Prior to the issuance of Regulation 61/2011, Indonesia had reported its mitigation actions under seven categories. The information on mitigation actions implemented in the period 2010–2012 has been reported in the BUR under these seven categories with redistributed targets.

58. The BUR contains detailed information on names of actions, description, methodologies and assumptions, status of implementation, number of activities implemented, quantitative and qualitative results achieved in the period 2010–2012. The TTE commends the Party on also providing the information on the co-benefits of the mitigation actions, which shows deep understanding of the influence of the mitigation measures implemented and planned.

59. The Party reported in total 72 mitigation actions, including 45 actions according to Regulation 61/2011, 4 nationally appropriate mitigation actions (NAMAs) policy-based mitigation actions and 23 mitigation actions outside the framework of Regulation 61/2011. The reported emission reduction achievement in the period 2010–2012 reached about 46.38 Gg CO_2 eq, including 41.29 Gg CO_2 eq from mitigation actions as defined in Regulation 61/2011 and 5.09 Gg CO_2 eq from activities outside the framework of Regulation 61/2011 and NAMA-supported activities. The impacts of mitigation actions were reported only partially and the BUR mentions that most of the reported emission reduction achievements have not been verified, except for the energy and agriculture sectors. During the technical analysis, Indonesia clarified that this is an area for improvement in the next BUR. The TTE notes that the transparency of the information reported could be enhanced by further developing the verification of emission reductions for mitigation actions by including the same in the subsequent BUR.

60. Nine mitigation actions were reported in the BUR for the energy sector under Regulation 61/2011, covering information on name, description, associated methodology and assumptions for estimating the mitigation impacts, current status of implementation, any supporting policy instruments and enabling policies or regulations supporting these mitigation actions, the targeted potential and achieved emission reductions as well as the agencies responsible for implementation. The total reported emission reductions achieved for the period 2010–2012 amounted to 3.39 Gg CO_2 eq, while the targeted potential by 2020 is 32.53 Gg CO_2 eq. In addition to these, two NAMAs with an emission reduction potential of 4.12 Gg CO_2 eq and six other mitigation actions under the category of activities outside the framework of Regulation 61/2011 with a target of 0.15 Gg CO_2 eq are also described in the BUR for the energy sector. The gas coverage of several mitigation actions is not indicated. During the technical analysis, Indonesia mentioned that it may include additional information on gas coverage of each mitigation action in the next BUR, which the TTE notes would improve the transparency of information reported in the future.

61. Under the transport sector, 17 mitigation actions under Regulation 61/2011 were reported in the BUR. The description, the potential or targeted emission reductions, achievements to date and implementation agencies were identified for all these actions. However, methodologies and assumptions for estimating the mitigation impacts were not reported for all actions, while for others, the information was either not applicable or not included. The mitigation actions were predominantly pilot projects. Information on their implementation was reported, although it did not cover all actions. The total reported emission reductions achieved for the period 2010–2012 was 0.27 Gg CO_2 eq, while the targeted potential by 2020 is 35.15 Gg CO_2 eq. In addition to these, one NAMA with an emission reduction potential of 1.5 Gg CO_2 eq by 2020 was included. Five actions under the category of activities outside the framework of Regulation 61/2011 with an achieved reduction of 4.25 Gg CO_2 eq in the period 2010–2012 and a target of 9.97 Gg CO_2 eq by 2020 bring the total mitigation actions under this sector to 23. The TTE notes that the transparency of the report could be enhanced by providing information on the methodologies used for projects in the transport sector, as well as steps undertaken to implement those actions.

62. For the agriculture sector, four mitigation actions were described, all under Regulation 61/2011, with an achievement of 35.49 Gg CO_2 eq for the period 2010–2012, and an additional potential of 43.59 Gg CO_2 eq reduction in emissions by 2020. The TTE commends Indonesia for the detailed and transparent description of mitigation actions in the agriculture sector.

63. The largest potential for reduction in emissions is within the 11 mitigation actions described under the LULUCF sector, with 605.90 Gg CO_2 eq by 2020. In addition, 10 actions are mentioned under the category of activities outside the framework of Regulation 61/2011. However, the potential of these 10 actions was not estimated. The BUR mentions that the measurement of emission reductions for certain actions in this sector is challenging, and emission reductions were measured using a sectoral baseline and not an activity-based baseline. However, since the revision of the baseline emissions of this sector is still under way, the achievement of emission reductions in this sector has not been reported. The TTE notes that the transparency of the report could be further improved by including this information.

64. For the waste sector, two mitigation actions under Regulation 61/2011, and one voluntary NAMA were described with a potential of 48.35 Gg CO_2 eq reduction in emissions by 2020. The results achieved are not indicated in tabular format but in a graph (figure 3.6). Further, the BUR mentions that other actions in this sector were not yet reported. The TTE notes that the inclusion of information in the next BUR on additional waste sector actions and the results achieved could improve the transparency and completeness of the report.

65. The TTE notes some inconsistencies between the information reported in table 3-5 (in chapter 3) and table 4 (in the executive summary) of the BUR, notably for activities in the energy and agriculture sectors, reported under Regulation 61/2011. Descriptions given in the corresponding section of the BUR (p. 3-13) show that a verification process for emission reduction achievements has been conducted for mitigation actions implemented in the energy and agriculture sectors. The TTE notes that a similar verification process for mitigation actions in other sectors could improve the transparency of reporting in the BUR.

66. The BUR indicates that various mitigation actions were developed under carbon trading mechanisms, such as the CDM. As at 31 January 2015, 242 projects had been developed and approved by the Indonesian designated national authority, among which 146

projects were registered with the secretariat and 21 projects were undergoing validation processes. The BUR indicates that REDD-plus[1] demonstration activities developed under bilateral cooperation might also become part of a trading mechanism.

67. The BUR describes Indonesia's domestic MRV arrangements (see chapter II.C.5 below for additional details).

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

68. As indicated in table 3 above, Indonesia reported in its BUR, in accordance with paragraphs 14–16 of the UNFCCC reporting guidelines on BURs, information on finance, technology and capacity-building needs and support received.

69. Indonesia reported on the constraints and gaps, and related financial, technical and capacity-building needs. The capacity-building needs are summarized in table 4-2, with details of information in appendix C3 of the BUR. Indonesia further elaborated them during the consultation with the TTE on identifying the capacity-building needs, in which the Party indicated that a bottom-up capacity-building approach for the agriculture and waste sectors was followed, while a top-down approach was found more appropriate for the energy, IPPU and LULUCF sectors.

70. The BUR does not include clear information on technology support received. The Government of Indonesia is in the process of developing a national registry system for climate change projects, in which information on technology support received is to be included. The Party indicated that such information may be provided in the next BUR submission.

71. The BUR includes information on technology needs. Most of the technology needs reported by Indonesia was in the form of technical assistance for sectors which implement supported NAMA activities. Technology needs were reported for the energy, waste, agriculture and LULUCF sectors. For the AFOLU sector, the technical support would cost about 50.5 billion Indonesian rupiah (USD 3.66 million), while for the energy and waste sectors the information on cost for technical support was not communicated. Detailed information was made available in appendix C2 of the BUR.

72. Indonesia provided in table 4-5 of the BUR details of the quantified support, financial sources, implementing agencies, with the type of support received as well as the status of such support received.

5. Domestic measurement, reporting and verification

73. As indicated in table 2 above, Indonesia reported in its BUR, in accordance with paragraph 13 of the UNFCCC reporting guidelines on BURs, information on the description of domestic MRV arrangements.

74. The BUR reports that the basis for MRV in Indonesia was set by Regulation 61/2011 for the national action plan (including local action plans), Regulation 71/2011 for the GHG inventory, and Ministry of Environment Regulation 15/2013 for mitigation actions. The Government has established a system for monitoring, evaluation and reporting

[1] In decision 1/CP.16, paragraph 70, the Conference of the Parties encouraged developing country Parties to contribute to mitigation actions in the forest sector by undertaking the following activities: reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks.

to monitor the results achieved by mitigation actions falling under Regulation 61/2011 (including at the national and local levels).

75. The BUR includes details of the new government structure, which includes the Ministry of Environment and Forestry and a newly established Directorate General in charge of climate change control (DJPPI) within this ministry. However, the BUR indicates (p. 3-13) that most of the reported emission reduction achievements have not been verified. During the technical analysis week, the Party highlighted this as one of the capacity-building needs for MRV and in particular for verification.

76. The BUR indicates that nationally funded mitigation actions are subject to domestic verification and standards, while internationally funded mitigation actions are subject to international guidelines and verification. MRV procedures for REDD-plus activities are being developed. For other mitigation actions, monitoring and reporting procedures will be developed according to their own specificities, but the verification procedure will follow Indonesia's domestic MRV system.

77. The BUR provides information on the steps of the domestic MRV. The entity responsible for conducting a mitigation activity will submit a report on the planning, implementation and achievements of the activity to the Ministry of Environment and Forestry. The DJPPI is in charge of the verification of the mitigation actions, with a verification team which will verify the report submitted. If the verification team does not approve the report, the entity responsible for conducting the mitigation action will have to revise its report. The approval of the report by the verification team leads to the issuance of a certificate of emission reduction by the Ministry of Environment and Forestry, while the DJPPI will register the certified mitigation activity and its results in a national registry system. The BUR details various verification instruments and indicates that a pilot project is being implemented in the energy sector, with the Ministry of Energy and Mineral Resources as the responsible entity.

D. Identification of capacity-building needs

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

(a) Development of mitigation strategies, including supporting regulations;

(b) Application of mitigation technologies;

(c) Verification of emission reduction for mitigation actions;

(d) Collection of activity data for international aviation and marine bunker fuels, ozone depleting substances and F-gases;

(e) Capacity-building support for the compilation of the GHG inventory, including for: collection of activity data for some categories such as international aviation and marine bunker fuels; putting in place a mechanism to collect data and include HFCs in future inventories; collecting data to estimate emissions of SF_6 from the usage of electrical equipment; disaggregating data on fuel consumption in agriculture, construction and manufacturing industries and differentiating them from energy balance data; estimation of indirect GHG emissions; provision of transparent information on methodologies and assumptions used for uncertainty assessment; and the development of a quality assurance and quality control process for improving the quality of activity data, and to document and archive the data and information;

(f) Capacity-building support for measuring the impact of mitigation policies by the implementation of modelling techniques, in order to separate the impact of the implementation of mitigation policies and measures from the reduction of emissions measured as the difference between the baseline and the actual emissions reported in the GHG inventory;

(g) Capacity-building support for the development of an MRV system and in particular for verifying the reported emission reduction achievement;

(h) Capacity-building support for the development of a functional database for mitigation and adaptation actions, which is intended to record and avoid any double counting on emission reduction.

III. Conclusions

79. The TTE concludes that:

(a) Most of the elements of information listed in paragraph 3(a) of the ICA guidelines have been included in the first BUR of Indonesia. The Party transparently reported most of the reporting provisions, consistent with the reporting guidelines, and provided the necessary clarification to enable the TTE to better understand the information reported in the BUR;

(b) Indonesia reported very comprehensive information on national circumstances and institutional arrangements, which facilitated a better understanding of the information reported in the BUR, as well as the national context within which the BUR was reported. The institutional arrangements established by Indonesia provide a good basis for the preparation of BURs on a continuous basis, in particular on GHG inventories and mitigation actions;

(c) For 2012, aggregate emissions of CO_2, CH_4 and N_2O excluding LULUCF and peat fires amounted to 758,979 Gg CO_2 eq, while aggregate emissions of CO_2, CH_4 and N_2O including LULUCF and peat fires amounted to 1,453,957 Gg CO_2 eq. Indonesia reported the summary tables for the GHG estimates for the years 2000 and 2012 and, at the sectoral level, emission estimates for the entire time series 2000–2012, using tier 1 and tier 2 methodologies of the 2006 IPCC Guidelines. However, the information was reported in tabular format consistent with the Revised 1996 IPCC Guidelines. The GHG inventory is transparent in most of the sectoral areas, which could be enhanced, mostly by using the reporting methodology in a manner consistent with the emission estimates methodology and reporting the assumptions used and the determined country-specific values. The TTE commends Indonesia for its efforts to report a high-quality inventory, and its use of the 2006 IPCC Guidelines;

(d) Indonesia reported extensive information on its mitigation actions, which are categorized in the context of the nature of the action: “goal-based actions” and “non-goal-based actions”. In 2009, the President of Indonesia pledged to reduce the GHG emission level to 26 per cent below BAU by 2020 (0.767 Gt CO_2 eq) using the domestic budget and to 41 per cent below BAU with international support (1.189 Gt CO_2 eq). Regarding the development of the MRV system, Indonesia provided a comprehensive overview of its national context, including the mitigation actions in different sectors and describes these according to the requirements of the UNFCCC reporting guidelines on BURs. The information reported is mostly transparent, but could be further enhanced by including information on the results achieved from mitigation actions in some sectors, as well as by ensuring the verification of the results achieved reported for other sectors; The BUR also

highlights that a system for MRV is being established. The TTE notes that the transparency of future reports could be enhanced by the implementation of this system;

(e) Regarding the information reported on constraints and gaps, and related financial, technical and capacity-building needs, Indonesia reported very detailed information. Concerning constraints and gaps, information is mostly related to gaps between national and local institutions, and between sectors. Information on financial needs covers international and domestic sources. With regard to capacity-building needs as well as technology needs, Indonesia reported information appropriate to national circumstances.

80. The TTE, in consultation with Indonesia, identified eight[2] 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. Indonesia further identified the following as the priority capacity-building needs:

(a) Support for ensuring consistency in the estimation and reporting methodologies used;

(b) Support for solving discrepancies in emission estimates obtained using the sectoral approach and the reference approach;

(c) Support for developing and implementing an MRV system;

(d) Support for mitigation actions, including the development of sectoral and subsectoral baseline/reference levels;

(e) Support for preparing national GHG inventories, in particular in the area of uncertainties.

[2] This refers to the number of capacity-building needs listed in chapter II.D.

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 Indonesia. Available at <http://unfccc.int/8722.php>.

Second national communication of Indonesia. Available at <http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php>.