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Reports on other activities

**Annual report on the technical review of greenhouse gas inventories
of Parties included in Annex I to the Convention**

Technical review of greenhouse gas inventories of Parties included in Annex I to the Convention

Annual report by the secretariat

Summary

This report provides information on the greenhouse gas inventory reviews conducted in the 2016 and 2017 review cycles, including on the selection of experts and lead reviewers and the composition of the expert review teams, and plans for the 2018 review cycle. It also provides information on review training activities under the Convention, the 14th meeting of inventory lead reviewers, and progress made in updating the UNFCCC roster of experts and revising the standardized data comparisons, tools and other materials used in the reviews.

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I. Introduction

A. Mandate

1. The Conference of the Parties (COP), at its ninth session, requested the secretariat to prepare an annual report on greenhouse gas (GHG) inventory review activities, including any recommendations resulting from the meetings of greenhouse gas inventory lead reviewers (LRs) participating in the technical review of GHG inventories of Parties included in Annex I to the Convention (Annex I Parties), for consideration by the Subsidiary Body for Scientific and Technological Advice (SBSTA).¹ COP 20 requested the secretariat to report annually to the SBSTA on the composition of expert review teams (ERTs), including the selection of experts and LRs, and on the actions taken to ensure the application of the selection criteria for ERTs.² The collective annual report to the SBSTA prepared by the LRs at their 14th meeting, containing suggestions on how to improve the quality, efficiency and consistency of the reviews,³ is contained in the annex.

2. COP 20 also requested the secretariat to include in the LR report referred to in paragraph 1 above any revised set of the standardized data comparisons, for consideration by the SBSTA, as well as information on the development of new and revised review tools and materials that support the tasks of the ERTs.⁴

3. Furthermore, COP 20 requested the secretariat to include in its report information on the training programme for review experts for the technical review of GHG inventories of Annex I Parties, in particular on examination procedures and the selection of trainees and instructors, in order to allow Parties to assess the effectiveness of the programme.⁵ In addition, the SBSTA requested the secretariat to include in that report information on progress made in updating the UNFCCC roster of experts.⁶

B. Scope of the report

4. This report provides information on activities relating to GHG inventory reviews conducted in the 2016 and 2017 review cycles and plans for the 2018 review cycle.⁷

5. The report focuses on the elements of the GHG inventory review process that are specific to the Convention and should be read in conjunction with the annual report on the technical review of GHG inventories and other information reported by Parties included in Annex I, as defined in Article 1, paragraph 7, of the Kyoto Protocol.⁸ The lessons learned from and problems encountered in the review process under the Convention have many elements in common with those related to the reviews under the Kyoto Protocol.

C. Possible action by the Subsidiary Body for Scientific and Technological Advice

6. The SBSTA will be invited to take note of this report.⁹

¹ Decision 12/CP.9, paragraph 10.

² Decision 13/CP.20, annex, paragraph 40.

³ Prepared in accordance with decision 13/CP.20, annex, paragraphs 44 and 78.

⁴ Decision 13/CP.20, paragraph 6, and annex, paragraph 78.

⁵ Decision 14/CP.20, paragraph 3.

⁶ FCCC/SBSTA/2006/5, paragraph 95.

⁷ For the 2017 review cycle, information as at 20 October 2017 has been provided.

⁸ FCCC/SBSTA/2017/INF.7.

⁹ In accordance with decision 13/CP.20, annex, paragraph 53.

II. Review activities

7. The GHG inventory review activities, along with some activities for the training of review experts and the organization of the meetings of LRs, are funded from the UNFCCC core budget. Some other related activities, such as refresher seminars for experienced reviewers, the strengthening of the secretariat's capacity to support review and training activities, and the development of the GHG information system, continue to be funded by voluntary contributions to supplementary funds.

A. The 2016 cycle of individual greenhouse gas inventory reviews

8. Following the adoption of the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories" (annex to decision 24/CP.19) (hereinafter referred to as the UNFCCC Annex I inventory reporting guidelines), the software for preparing the common reporting format (CRF) tables, CRF Reporter, had to be redesigned. Owing to a delay in the availability of a functioning CRF Reporter, and pending the finalization of the full set of accounting, reporting and review modalities under Articles 5, 7 and 8 of the Kyoto Protocol, not all Annex I Parties were able to submit their 2015 GHG inventories in time to start the review process thereof in 2015.

9. The COP requested¹⁰ the secretariat to organize, for Annex I Parties that did not undergo a review of their annual GHG inventory in 2015, the review of their 2015 GHG inventory submission under the Convention in conjunction with the review of their 2016 GHG inventory submission, ensuring that the review was organized in accordance with decision 13/CP.20. The ERTs were to review identical information only once, but produce a separate, complete review report for each Party for each year, and could replicate the review text in both review reports concerning identical information in both years' inventories.

10. Moreover, the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol requested the secretariat¹¹ to organize, in accordance with decisions 2/CMP.8 and 4/CMP.11, the review of the reports to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol in conjunction with the review of the 2015 and 2016 GHG inventory submissions under the Convention and the Kyoto Protocol, striving to complete each review no later than one year after the submission date of the report.

11. In 2016, 9 in-country reviews, 10 centralized reviews (covering three or four Parties each) and 2 desk reviews (covering two Parties each), covering a total of 44 Annex I Parties, were conducted. As at 20 October 2017, all review reports except two (those of the European Union and the United Kingdom of Great Britain and Northern Ireland) had been published.¹² Table 1 provides information on the 2016 review cycle and the publication date of each review report.

Table 1

2016 review cycle, including publication dates of annual review reports for the 2015 and 2016 greenhouse gas inventory submissions

| <i>Party</i> | <i>Review week dates (review type)</i> | <i>2015 and 2016 ARR publication date(s)</i> |
|------------------------|--|--|
| Australia ^a | 14–19 September 2015 (ICR) 5–10 September 2016 (CR) | 13 April 2016 27 April 2017 |
| Austria | 26 September to 1 October 2016 (CR) | 31 May 2017 |

¹⁰ Decision 20/CP.21, paragraph 1.

¹¹ Decision 10/CMP.11, paragraph 2.

¹² The published review reports are available at <http://unfccc.int/9477> (review reports for the 2015 GHG inventory submissions) and <http://unfccc.int/9916> (for the 2016 GHG inventory submissions).

| <i>Party</i> | <i>Review week dates (review type)</i> | <i>2015 and 2016 ARR publication date(s)</i> |
|--------------------------|--|--|
| Belarus | 26 September to 1 October 2016 (ICR) | 7 March 2017 |
| Belgium | 12–17 September 2016 (CR) | 20 June 2017 |
| Bulgaria | 10–15 October 2016 (ICR) | 21 June 2017 |
| Canada ^a | 12–17 October 2015 (CR) 17–22 October 2016 (DR) | 30 March 2016 16 June 2017 |
| Croatia | 19–24 September 2016 (CR) | 30 March 2017 |
| Cyprus | 12–17 September 2016 (ICR) | 20 October 2017 |
| Czechia | 29 August to 3 September 2016 (CR) | 31 August 2017 |
| Denmark | 26 September to 1 October 2016 (ICR) | 9 August 2017 |
| Estonia | 19–24 September 2016 (CR) | 22 March 2017 |
| European Union | 19–24 September 2016 (CR) | In preparation |
| Finland | 5–10 September 2016 (CR) | 16 March 2017 |
| France | 19–24 September 2016 (ICR) | 26 July 2017 |
| Germany | 19–24 September 2016 (ICR) | 13 April 2017 |
| Greece | 29 August to 3 September 2016 (CR) | 31 August 2017 |
| Hungary | 19–24 September 2016 (ICR) | 10 March 2017 |
| Iceland | 19–24 September 2016 (CR) | 30 March 2017 |
| Ireland | 29 August to 3 September 2016 (CR) | 20 July 2017 |
| Italy | 26 September to 1 October 2016 (CR) | 1 June 2017 |
| Japan | 17–22 October 2016 (DR) | 5 April 2017 |
| Kazakhstan | 5–10 September 2016 (CR) | 7 March 2017 |
| Latvia | 29 August to 3 September 2016 (CR) | 7 March 2017 |
| Liechtenstein | 26 September to 1 October 2016 (CR) | 21 September 2017 |
| Lithuania | 5–10 September 2016 (CR) | 6 March 2017 |
| Luxembourg | 26 September to 1 October 2016 (CR) | 30 August 2017 |
| Malta | 10–15 October 2016 (ICR) | 21 July 2017 |
| Monaco ^b | 26 September to 1 October 2016 (CR) | 30 August 2017 |
| Netherlands | 19–24 September 2016 (CR) | 23 June 2017 |
| New Zealand ^a | 28 September to 3 October 2015 (DR) 26 September to 1 October 2016 (CR) | 13 April 2016 10 August 2017 |
| Norway | 29 August to 3 September 2016 (CR) | 28 March 2017 |
| Poland | 12–17 September 2016 (CR) | 21 June 2017 |
| Portugal | 12–17 September 2016 (CR) | 5 September 2017 |
| Romania | 12–17 September 2016 (CR) | 21 June 2017 |
| Russian Federation | 17–22 October 2016 (DR) | 14 June 2017 18 September 2017 |

| <i>Party</i> | <i>Review week dates (review type)</i> | <i>2015 and 2016 ARR publication date(s)</i> |
|--|---|--|
| Slovakia | 5–10 September 2016 (CR) | 3 March 2017 |
| Slovenia | 26 September to 1 October 2016 (CR) | 22 August 2017 |
| Spain | 12–17 September 2016 (CR) | 14 July 2017 |
| Sweden | 29 August to 3 September 2016 (CR) | 6 April 2017 |
| Switzerland | 5–10 September 2016 (ICR) | 20 April 2017 |
| Turkey | 17–22 October 2016 (DR) | 25 April 2017 |
| Ukraine ^a | 12–17 October 2015 (CR) 5–10 September 2016 (CR) | 6 April 2016 20 April 2017 |
| United Kingdom of Great Britain and Northern Ireland | 12–17 September 2016 (CR) | In preparation |
| United States of America | 19–24 September 2016 (CR) | 29 June 2017 |

Abbreviations: ARR = annual review report, CR = centralized review, DR = desk review, ICR = in-country review.

^a The 2015 greenhouse gas inventory submissions of these Parties were reviewed in the 2015 review cycle, not in the 2016 cycle.

^b Monaco submitted its 2016 greenhouse gas inventory submission on 15 March 2017 (common reporting format tables) and 12 September 2017 (national inventory report). Therefore, Monaco's 2016 submission could not be reviewed during the 2016 review cycle.

B. The 2017 cycle of individual greenhouse gas inventory reviews

1. Greenhouse gas inventory submissions

12. Between 6 April and 20 October 2017, the secretariat received submissions of annual GHG inventories for 2017 from 44 Annex I Parties (see table 2).

13. The secretariat coordinated individual reviews of 22 of the submissions referred to in paragraph 12 above, owing to the resources from the core budget being insufficient for the secretariat to organize the 2017 review cycle fully in accordance with the relevant mandates, while the available support in terms of supplementary funding, as at 31 May 2017 (the latest date for the start of the preparations), was not at a level to make up for the lack of resources in the core budget.¹³ Six of the individual reviews were organized as in-country reviews, held between 28 August and 23 September 2017, 11 submissions were reviewed in three centralized reviews (in Bonn, Germany, between 11 and 30 September 2017) and 4 submissions in two desk reviews (between 28 August and 9 September 2017). The reports on those reviews are in preparation.

Table 2

Submission of greenhouse gas inventories in 2017 and review dates and types during the 2017 review cycle

| <i>Party</i> | <i>Original submission date</i> | | <i>Review dates (review type)</i> |
|--------------|---------------------------------|-------------------|------------------------------------|
| | <i>NIR</i> | <i>CRF tables</i> | |
| Australia | 27 May 2017 | 27 May 2017 | 28 August to 2 September 2017 (DR) |
| Austria | 12 April 2017 | 12 April 2017 | Not subject to individual review |

¹³ For more information about the financial circumstances, see the annex, paragraphs 3–5.

| <i>Party</i> | <i>Original submission date</i> | | <i>Review dates (review type)</i> |
|--------------------|---------------------------------|-------------------|-------------------------------------|
| | <i>NIR</i> | <i>CRF tables</i> | |
| Belarus | 1 June 2017 | 1 June 2017 | 18–23 September 2017 (CR) |
| Belgium | 13 April 2017 | 11 April 2017 | Not subject to individual review |
| Bulgaria | 12 April 2017 | 11 April 2016 | Not subject to individual review |
| Canada | 13 April 2017 | 13 April 2017 | 11–16 September 2017 (CR) |
| Croatia | 13 April 2017 | 12 April 2017 | Not subject to individual review |
| Cyprus | 8 May 2017 | 8 May 2017 | 25–30 September 2017 (CR) |
| Czechia | 12 April 2017 | 13 April 2017 | 4–9 September 2017 (ICR) |
| Denmark | 13 April 2017 | 10 April 2017 | Not subject to individual review |
| Estonia | 12 April 2017 | 13 April 2017 | Not subject to individual review |
| European Union | 14 April 2017 | 14 April 2017 | Not subject to individual review |
| Finland | 11 April 2017 | 11 April 2017 | Not subject to individual review |
| France | 8 April 2017 | 13 April 2017 | 4–9 September 2017 (DR) |
| Germany | 13 April 2017 | 11 April 2017 | Not subject to individual review |
| Greece | 11 April 2017 | 11 April 2017 | 11–16 September 2017 (CR) |
| Hungary | 15 April 2017 | 15 April 2017 | 4–9 September 2017 (DR) |
| Iceland | 12 April 2017 | 13 April 2017 | 28 August to 2 September 2017 (ICR) |
| Ireland | 14 April 2017 | 12 April 2017 | Not subject to individual review |
| Italy | 12 April 2017 | 11 April 2017 | Not subject to individual review |
| Japan | 13 April 2017 | 13 April 2017 | Not subject to individual review |
| Kazakhstan | 4 July 2017 | 14 April 2017 | 18–23 September 2017 (ICR) |
| Latvia | 13 April 2017 | 13 April 2017 | Not subject to individual review |
| Liechtenstein | 13 April 2017 | 27 March 2017 | Not subject to individual review |
| Lithuania | 14 April 2017 | 14 April 2017 | 18–23 September 2017 (CR) |
| Luxembourg | 6 April 2017 | 6 April 2017 | Not subject to individual review |
| Malta | 29 May 2017 | 8 May 2017 | 25–30 September 2017 (CR) |
| Monaco | 20 September 2017 | 20 April 2017 | 25–30 September 2017 (CR) |
| Netherlands | 14 April 2017 | 14 April 2017 | 11–16 September 2017 (ICR) |
| New Zealand | 26 May 2017 | 26 May 2017 | 11–16 September 2017 (CR) |
| Norway | 7 April 2017 | 7 April 2017 | Not subject to individual review |
| Poland | 13 April 2017 | 13 April 2017 | Not subject to individual review |
| Portugal | 13 April 2017 | 12 April 2017 | Not subject to individual review |
| Romania | 14 April 2017 | 14 April 2017 | Not subject to individual review |
| Russian Federation | 25 July 2017 | 14 April 2017 | 11–16 September 2017 (CR) |

| Party | Original submission date | | |
|--|--------------------------|---------------|------------------------------------|
| | NIR | CRF tables | Review dates (review type) |
| Slovakia | 11 April 2017 | 11 April 2017 | 18–23 September 2017 (CR) |
| Slovenia | 14 April 2017 | 12 April 2017 | Not subject to individual review |
| Spain | 12 April 2017 | 12 April 2017 | 18–23 September 2017 (ICR) |
| Sweden | 12 April 2017 | 12 April 2017 | 18–23 September 2017 (CR) |
| Switzerland | 13 April 2017 | 13 April 2017 | 28 August to 2 September 2017 (DR) |
| Turkey | 15 April 2017 | 14 April 2017 | Not subject to individual review |
| Ukraine | 24 May 2017 | 24 May 2017 | 4–9 September 2017 (ICR) |
| United Kingdom of Great Britain and Northern Ireland | 13 April 2017 | 14 April 2017 | 25–30 September 2017 (CR) |
| United States of America | 14 April 2017 | 14 April 2016 | Not subject to individual review |

Abbreviations: CR = centralized review, CRF = common reporting format, DR = desk review, ICR = in-country review, NIR = national inventory report.

2. Organization of reviews and composition of expert review teams

14. In accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention, Part III: UNFCCC guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention” (annex to decision 13/CP.20) (hereinafter referred to as the UNFCCC Annex I inventory review guidelines), the GHG inventory review process is conducted in two stages: initial assessment by the secretariat, which results in status reports and assessment reports, and individual review by ERTs, which results in annual review reports.

15. The initial assessment stage provides an immediate quality assessment aiming to verify that the GHG inventory submission is consistent, complete and timely and its format correct. Status reports for all 44 GHG inventory submissions received were prepared and published on the UNFCCC website.¹⁴ Assessment reports provide a preliminary assessment of the inventory of an individual Party and identify any potential inventory problems, which are then assessed during the individual review stage. Assessment reports are not published but are provided to the ERTs for further assessment. Assessment reports were prepared for all Parties that were subject to individual review during the 2017 review cycle.

16. In the 2017 review cycle, the secretariat coordinated the review of the GHG inventories of 22 Parties (see para. 13 above), by means of six in-country reviews, two desk reviews (covering two Parties each) and three centralized reviews (covering four Parties each). Table 2 shows the review dates and type of review for each Party. The reports on the reviews are in preparation.

17. In accordance with annex I to decision 12/CP.9 and the annex to decision 14/CP.20, new experts who have taken the training courses for reviews under the Convention and have passed the corresponding examinations can participate in an ERT.¹⁵ In 2017, the secretariat invited 151 experts to participate in the GHG inventory reviews, 42 of whom declined on account of being unavailable due to previous commitments, a heavy workload,

¹⁴ <http://unfccc.int/10116>.

¹⁵ For more information on the training of review experts, see chapter V of document FCCC/SBSTA/2016/INF.12.

a lack of financial resources or other reasons. In addition, 10 experts informed the secretariat of their availability on dates other than the scheduled review dates on which they were invited to participate or of their availability only on particular dates, which introduced additional challenges for the planning of the reviews.

18. In selecting members of ERTs, the secretariat seeks to ensure an overall geographical balance in the number of experts from Annex I Parties and Parties not included in Annex I to the Convention (non-Annex I Parties). In the 2017 review cycle, a total of 119 individuals from 54 Parties served as inventory experts on review teams. Of those experts, 43 were from non-Annex I Parties, 18 from Annex I Parties with economies in transition and 58 from other Annex I Parties.

19. Between 2000, when individual reviews of GHG inventory submissions were first conducted during the trial period, and 2017, 495 individual experts from 100 Parties (41 Annex I Parties and 59 non-Annex I Parties) participated in GHG inventory review activities.¹⁶

20. Table 3 provides a breakdown of the participation of experts by nominating Party in the 2017 review cycle (an expert who participates in multiple reviews is counted as a different expert for each review). The table shows that experts from the following Annex I Parties were not involved in the review process in 2017: Belarus, Croatia, Cyprus, European Union, Iceland, Latvia, Liechtenstein, Luxembourg, Malta, Monaco, Norway, Portugal, Slovakia and Slovenia. In general, there were several reasons for experts not participating in the 2017 review cycle: (1) some Annex I Parties, for example Liechtenstein and Monaco, had not nominated any experts; (2) some Parties had nominated experts only recently and those experts had not yet taken the training courses and passed the relevant examinations; (3) some Parties had not fully updated their nominations to the UNFCCC roster of experts and some nominated experts included on the roster were not available for the reviews; (4) some experts had a heavy workload and other job obligations during the review period; and (5) some Annex I Parties were experiencing a shortage of financial resources for supporting experts' participation in the reviews; for example, in the course of the preparations for the 2017 review cycle, the secretariat received 13 requests from experts nominated by Annex I Parties for exceptional funding.

21. Table 3 also shows that many Parties continued to strongly support the review process by providing multiple experts, and that experts from the following Parties participated in four or more reviews in 2017: Belgium (four), Brazil (eight), China (five), Japan (seven), New Zealand (four), Romania (four), Russian Federation (four), Sweden (four) and United Kingdom of Great Britain and Northern Ireland (seven). Such strong support is a key factor in making the reviews successful.

Table 3

Number of experts participating in the 2017 greenhouse gas inventory review cycle, by nominating Party

| <i>Annex I Parties</i> | | <i>Annex I Parties with economies in transition</i> | <i>Non-Annex I Parties</i> | |
|------------------------|--|---|----------------------------|---|
| Australia – 3 | Netherlands – 3 | Bulgaria – 3 | Algeria – 1 | Mongolia – 2 |
| Austria – 2 | New Zealand – 4 | Czechia – 2 | Argentina – 1 | Peru – 1 |
| Belgium – 4 | Spain – 2 | Estonia – 1 | Azerbaijan – 1 | Republic of Moldova – 3 |
| Canada – 1 | Sweden – 4 | Hungary – 1 | Benin – 1 | San Marino – 1 |
| Denmark – 3 | Switzerland – 3 | Lithuania – 1 | Brazil – 8 | South Africa – 2 |
| Finland – 1 | Turkey – 1 | Poland – 1 | Chile – 1 | Sudan – 1 |
| France – 1 | United Kingdom of Great Britain and Northern Ireland – 7 | Romania – 4 | China – 5 | The former Yugoslav Republic of Macedonia – 2 |
| Germany – 3 | | Russian Federation – 4 | Colombia – 1 | United Republic of |
| Greece – 2 | | Ukraine – 3 | Costa Rica – 1 | |

¹⁶ Not including 12 observers that participated in the reviews between 2000 and 2008.

| <i>Annex I Parties</i> | <i>Annex I Parties with economies in transition</i> | <i>Non-Annex I Parties</i> |
|-----------------------------|---|----------------------------|
| Ireland – 1 | United States of America – 2 | Cuba – 1 |
| Italy – 2 | | Tanzania – 1 |
| Japan – 7 | | Ethiopia – 1 |
| Kazakhstan ^a – 1 | | Gambia – 1 |
| | | Georgia – 2 |
| | | Zimbabwe – 2 |

^a Kazakhstan is a Party included in Annex I for the purpose of the Kyoto Protocol.

22. When inviting experts to participate as LRs, the secretariat seeks to ensure an overall geographical balance in the number of experts from Annex I Parties and non-Annex I Parties. It also takes into consideration the experts' experience in the preparation and management of GHG inventories, previous participation in reviews, technical expertise in the Intergovernmental Panel on Climate Change (IPCC) sectors and successful completion of the training courses. In 2017, a total of 22 individuals from 15 Parties served as LRs. Of those experts, 10 were from non-Annex I Parties and 12 from Annex I Parties (of which 2 were from Annex I Parties with economies in transition).

23. For each in-country review the secretariat invited one review expert for each sector and one generalist to cover cross-cutting issues. For each desk review the secretariat invited two review experts for each sector (except for the agriculture sector in the second desk review, for which there were three experts) and two generalists to cover cross-cutting issues. For each centralized review, the secretariat invited two, three or four review experts to cover each sector and two generalists to cover cross-cutting issues. In accordance with the conclusions of the 11th meeting of LRs, the secretariat ensured that no land use, land-use change and forestry expert acted as an LR (except for one review).¹⁷

24. The secretariat continues to reinforce that ERTs undertaking centralized reviews should include new review experts. In 2017, 13 new experts that had taken the training courses and passed the examinations participated in the reviews, assuming full responsibility as reviewers with some support from the LRs and experienced reviewers.

25. The secretariat is making efforts to further improve the timeliness of the publication of the review reports during the 2017 review cycle, while maintaining the required quality level by, in particular, increasing the number of experts per team and updating the review materials.¹⁸

C. The 2018 cycle of individual greenhouse gas inventory reviews

26. Annex I Parties will submit their 2018 GHG inventory submissions in accordance with the UNFCCC Annex I inventory reporting guidelines by 15 April 2018. The inventories will be reviewed according to the UNFCCC Annex I inventory review guidelines. The secretariat will organize the review of the 2018 GHG inventory submissions under the Convention to be held in the third quarter of 2018.

III. Meeting of greenhouse gas inventory lead reviewers

27. The 14th meeting of GHG inventory LRs was held in Bonn on 8 and 9 March 2017. A total of 37 experts from non-Annex I Parties and 49 experts from Annex I Parties were

¹⁷ See paragraph 24 of the conclusions, available at http://unfccc.int/files/national_reports/annex_i_ghg_inventories/review_process/application/pdf/11th_rsmeeting_conclusionsrecommendations.pdf.

¹⁸ For example, the secretariat improved the functionality of the virtual team room (the software used to facilitate the review of GHG inventories) by improving the question and answer module, the report preparation module and review issue tracking system module. In addition, the secretariat developed a new Locator tool, available as a downloadable application. These tools are not available publicly.

invited to the meeting. Of the 67 experts who attended, 31 were from non-Annex I Parties and 36 were from Annex I Parties. In the morning of 8 March 2017, before the LRs' meeting, the secretariat held a refresher seminar for LRs and experienced reviewers, which was attended by 64 experts (30 from non-Annex I Parties and 34 from Annex I Parties) (see para. 37 below).

28. In accordance with decisions 13/CP.20, 22/CMP.1 and 24/CMP.1, the meeting facilitated the work of LRs in fulfilling their task to ensure the consistency of reviews across all Parties and generated suggestions on how to improve the quality and efficiency of the reviews. The conclusions and recommendations from the meeting will be reported to the SBSTA, in accordance with the annexes to decisions 13/CP.20 and 22/CMP.1 in conjunction with decision 4/CMP.11. Such reports provide the SBSTA with inputs for providing further guidance to the secretariat on the selection of experts and the coordination of the ERTs and the expert review process. In addition, decision 13/CP.20 invites LRs to provide guidance on such matters as review tools, materials and templates¹⁹ as well as to provide suggestions on how to improve the quality, efficiency and consistency of the reviews.²⁰

IV. UNFCCC roster of experts and availability of nominated experts

29. As at 20 October 2017, the UNFCCC roster of experts (hereinafter referred to as the roster) contained 1,012 GHG inventory experts, 513 from non-Annex I Parties and 499 from Annex I Parties. Among those experts, 518 experts, including 63 LRs that have passed all mandatory examinations to act as reviewers for the annual reviews under Article 8 of the Kyoto Protocol, could be invited to participate in GHG reviews for Annex I Parties.

30. Many of the qualified experts on the roster have not actively participated in the reviews in recent years. In addition, the significant workloads of the nominated experts at their respective offices prohibit them from devoting sufficient time to the online training programmes and subsequently taking part in annual GHG inventory reviews under the Convention and the Kyoto Protocol. The situation is exacerbated by the increasing number of technical reviews of biennial reports submitted by Annex I Parties as well as the technical analysis of biennial update reports submitted by non-Annex I Parties. These developments require more active GHG inventory experts to be nominated to the roster. In addition, some experts nominated to the roster have not yet taken the mandatory training courses or not yet passed all the relevant examinations for the training programmes for reviews under the Convention and under the Kyoto Protocol. This is particularly a problem for the reviews under the Kyoto Protocol, for which the annex to decision 5/CMP.11 requires experienced experts to take the updated courses to become new LRs, generalists and reviewers of information on activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol for the second commitment period.²¹

31. Taking account of this situation, in April 2017 the secretariat invited national focal points (NFPs) to nominate new experts who can actively participate in reviews of GHG inventories, biennial reports and national communications submitted by Annex I Parties and in analysis of biennial update reports submitted by non-Annex I Parties. The secretariat also invited NFPs to regularly update the information on experts on the roster and to remove the experts who are no longer available for the reviews. The secretariat informed NFPs that the online self-nomination function of the new version of the roster, introduced in August 2016,²² allows experts to fill in the online nomination form directly and to forward it to the NFP for approval. Between 11 April 2017 and 10 October 2017, 230 experts' records on the roster were updated, added or deleted.

¹⁹ Decision 13/CP.20, annex, paragraph 48.

²⁰ Decision 13/CP.20, annex, paragraph 44.

²¹ See chapter V of document FCCC/SBSTA/2017/INF.7.

²² Available at <http://www4.unfccc.int/sites/roe/Pages/Home.aspx>.

32. In 2017, the secretariat continued to make an online form available on the UNFCCC website to facilitate the nomination of experts to the roster and the update of the list of nominees and their information by Parties.²³ At the same time, it continued to process the nominations of experts received via email, mail and fax in order to further facilitate nominations by Parties. The secretariat also continuously improved the accessibility and user-friendliness of the information on the training programmes on the UNFCCC website and updated its content to reflect the latest developments.²⁴

V. Training of experts

A. Training programme for experts for the technical review of greenhouse gas inventories of Parties included in Annex I to the Convention

33. The COP requested the secretariat to implement the training programme for review experts for the technical review of GHG inventories of Annex I Parties (hereinafter referred as the training programme), including the examination of experts, and to give priority to organizing an annual training seminar for the basic course as well as to organizing an annual refresher seminar for experienced GHG inventory review experts, subject to the availability of resources.²⁵ It encouraged Annex I Parties in a position to do so to provide financial support for the implementation of the training programme.

34. The training programme consists of the basic course; a course on improving communication and facilitating consensus within ERTs; and a course on the review of complex models and higher-tier methods. The basic course of the training programme provides a comprehensive introduction to the UNFCCC Annex I inventory review guidelines, an overview of the UNFCCC Annex I inventory reporting guidelines, guidance on procedures and approaches for the technical review of GHG inventories, general methodological guidance provided by the IPCC and detailed information on the specific aspects of the review of the five IPCC inventory sectors. In accordance with the annex to decision 14/CP.20, the new basic course of the training programme, with updated information to meet the requirements for the adoption of the revised UNFCCC Annex I inventory reporting guidelines and the UNFCCC Annex I inventory review guidelines (by decisions 24/CP.19 and 13/CP.20, respectively) and the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*, was formally launched online in September 2015.

B. Implementation of the training programme

35. In 2017, the basic course facilitated by instructors was offered online for a six-week period (instructed course) in February and March. This was followed by an in-person three-day regional training seminar with examinations from 21 to 23 March in Victoria Falls, Zimbabwe, with a particular focus on experts from the African region (but inclusive of experts from other regions). A total of 54 inventory experts nominated by their NFPs were invited to take the basic course and 38 experts (32 from non-Annex I Parties and 6 from Annex I Parties) took the online course. Among them, 27 experts (24 from non-Annex I Parties, including 20 from the African region, and 3 from Annex I Parties) participated in the training seminar. At the training seminar, the trainees participated in a simulated centralized review using a real annual GHG inventory submission over two and a half days. On the last half day of the seminar, the trainees took the written exams for the overview course and the corresponding sectoral course that they completed online. Three highly experienced LRs, who are recognized for their knowledge and extensive experience in such training activities and who are on the UNFCCC roster of consultants,²⁶ acted as instructors

²³ http://unfccc.int/files/parties_and_observers/roster_of_experts/application/msword/new_form_as_of_19_may_2014_clean_version_for_the_web.doxc.doc.

²⁴ See <http://unfccc.int/2763>.

²⁵ Decisions 12/CP.9, 10/CP.15 and 14/CP.20.

²⁶ See <https://unfccc.int/secretariat/employment/consultancy.html>.

during the online study period and for the regional seminar, and provided guidance to, and responded to questions from, the trainees. As a result, 10 experts, comprising 7 experts from non-Annex I Parties and 3 experts from Annex I Parties, passed the mandatory exams, including the expert who took the exams without attending the seminar.

36. For the experts who have sufficient experience of national GHG inventories, the secretariat offers an online course for a six-week period without the support of instructors (non-instructed course). Since the launch of the new basic course in 2015, the secretariat has invited 356 experienced inventory reviewers, including LRs, to take the non-instructed online course, as encouraged in the annex to decision 14/CP.20, in order to update their skills and knowledge, and the relevant examinations. In response to the invitations, 289 LRs and experienced reviewers registered for the non-instructed course. In-person exams were organized, making use of existing opportunities where secretariat staff could be present, such as during an in-country review, session of the COP or LRs' meeting. Some Annex I Parties organized the exams for their experts and invited the secretariat to supervise them. Between 21 September 2016 and 26 September 2017, seven national GHG inventory experts took the non-instructed course, resulting in six new experts that passed the mandatory examinations to become a review expert under the Convention. In the same period, 19 experienced review experts took the opportunity to take the examinations after completing the updated online course.

37. In 2017, the secretariat organized a half-day refresher seminar for experienced GHG inventory reviewers, held on 8 March in conjunction with the 14th meeting of LRs, focusing on: experience from desk reviews and in-country reviews of GHG inventories in 2016; improving the drafting of findings and recommendations in review reports; efficient simultaneous use of the review issues tracking system and the review report template; and reviewing the information on land use, land-use change and forestry activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol in the second commitment period. A total of 64 experienced experts (30 from non-Annex I Parties and 34 from Annex I Parties), including LRs, participated in the refresher seminar.

38. Since June 2012, the secretariat has offered a course on the review of complex models and higher-tier methods online to both experienced and new experts. To date, 119 experts have registered and requested access to the course and 25 experts have passed the optional examination.

39. Training activities for review experts are of crucial importance for ensuring the required quality and consistency of the review process. Such training is particularly valuable for experts from non-Annex I Parties since many of them do not work on GHG inventories on a daily basis and/or may not be familiar with national GHG inventories based on higher-tier methodologies provided by the IPCC. The secretariat continues its efforts to encourage all available experts listed on the roster nominated for GHG inventory review activities to take the relevant training courses and examinations. The secretariat facilitates the access of experts to the relevant training programmes, periodically invites Parties to nominate new experts for the training programmes and provides relevant information on the training courses on the UNFCCC website²⁷ and via other electronic means, such as the secretariat's newsletter.

VI. Review tools and materials

40. Providing support to the UNFCCC reporting and review processes requires a number of information technology systems, which differ in purpose, scope, size and degree of support. They vary from extensive, complex databases, such as the Locator, to smaller, focused review tools serving particular analytical purposes in the review process.

²⁷ http://unfccc.int/national_reports/expert_training/training_programmes_for_experts/items/2763.php.

A. Greenhouse gas data warehouse

41. In order to fulfil its mandates, the secretariat developed and put in place a data warehouse to manage the storage and management of data related to GHG inventories and submissions. Such a complex software and database system is needed to enable the processing of extensive sets of GHG data reported by Annex I Parties and it allows the generation of key reports and review tools as well as feeding the GHG data interface. The data warehouse is currently being upgraded to reflect the changes stemming from the revised reporting and review inventory guidelines and to address technology obsolescence issues.

42. The data warehouse upgrade is necessary not only for the GHG data interface and the production of streamlined aggregate GHG information, but also for the redesign of the existing review tools. The update covers all the existing review tools, especially the Locator and the submission comparison tool.

43. At the 14th meeting of LRs, the LRs²⁸ noted that the development of the new data warehouse with GHG emission data from Parties' GHG inventory submissions is still ongoing and could not be completed because of insufficient funding. They also noted that this affects the functioning of the review tools, the GHG data interface, the status reports under both the Convention and the Kyoto Protocol, and the aggregate GHG information, which are linked to the data warehouse.

B. Aggregate information on greenhouse gas emissions by sources and removals by sinks

44. COP 20 requested the secretariat to compile and tabulate aggregate information and trends concerning GHG emissions by sources and removals by sinks from the latest available GHG inventory submissions of Annex I Parties, and any other inventory information, and to publish that information on the UNFCCC website as well as in a stand-alone document.²⁹

45. In order to streamline the aggregate GHG information, the secretariat circulated a questionnaire to experienced reviewers and compiled and presented the results, in accordance with a recommendation from the 12th meeting of LRs. Owing to the low response rate of the questionnaire and in line with a recommendation from the 13th meeting of LRs, the secretariat provisionally implemented its streamlining proposal for the 2016 review cycle. In addition, and as recommended by the LRs, the same process of consultations was extended until December 2016.

46. The LRs, at their 14th meeting, agreed on the streamlining of the aggregate GHG information and recommended that the aggregate GHG information remain as per the version published for the 2016 review cycle. Aggregate GHG information was published most recently on 7 July 2017.

C. Greenhouse gas data interface

47. The GHG data interface is an online portal on the UNFCCC website³⁰ that allows public access to GHG data reported by Parties under the Convention and its Kyoto Protocol. The interface is currently being upgraded, as mandated at SBSTA 38,³¹ following the adoption of the UNFCCC Annex I inventory reporting guidelines. The upgrade is being undertaken together with the overhaul of the data warehouse. However, the financial resources received to date have been insufficient to complete the necessary changes. A

²⁸ See the annex, paragraph 19.

²⁹ Decision 13/CP.20, paragraph 8.

³⁰ <http://unfccc.int/3800>.

³¹ FCCC/SBSTA/2013/3, paragraph 121.

demonstration of progress was made at the 13th and 14th meetings of LRs and key modules of the GHG data interface were released on the UNFCCC website³² in 2016 and May 2017.

D. Standardized set of data comparisons

48. COP 20 requested the secretariat to develop and implement a standardized set of data comparisons and to include information on those data comparisons in its annual report to the SBSTA.³³ Information on the standardized set of data comparisons was presented at the 12th, 13th and 14th meetings of LRs.

49. Regarding the standardized set of data comparisons, the LRs³⁴ noted that the consistency checks in the status reports have been implemented in line with the recommendations from the 13th meeting of LRs. The LRs also noted the implementation of the recommendation from their 13th meeting regarding highlighting, in the status reports, the missing information identified.

50. In addition, the LRs requested the secretariat to invite a group of experienced reviewers from among the LRs to conduct an assessment of the standardized data comparisons. Accordingly, the secretariat is currently making all necessary arrangements to further proceed and will report back at the 15th meeting of the LRs.

E. Locator and other review tools

51. Following a recommendation from the 14th meeting of LRs and considering the feedback received from experts during the 2016 review cycle, the secretariat further enhanced some of the GHG inventory review tools, especially the Locator. The Locator is an application that provides time-series data from submitted CRF tables. It shows quantitative information (e.g. emissions, implied emission factors and activity data) as well as qualitative information (e.g. notation keys) reported by all Annex I Parties. The new Locator together with its user manual was made available in advance of the launch of the 2017 review cycle.

52. The new Locator is a downloadable application that, together with its database, offers the possibility to work offline, which can increase performance, usability, response time and accessibility in areas with poor Internet connection. The new Locator includes data from all CRF submissions received in 2017, from the latest CRF submissions received in 2016 and from the latest CRF submissions received in 2015 for all Annex I Parties.

53. The secretariat has not been in a position to implement the planned enhancements of all the review tools as anticipated, owing to limited financial resources.

54. Except for the tools used to compare emissions and parameters in submissions (comparison tool and submission comparison tool), which are used mostly by experts during the review process, all the other tools are usually used internally by review officers to prepare the necessary outputs at different stages of the review process. The statistical outlier detection tool and key category analysis tool are used for identifying outliers in data sets and for highlighting the key categories that should be prioritized during the review, while the 2% tool and 7% tool are used for comparing emission values from different years or different Parties.

F. Virtual team room

55. The virtual team room for GHG inventories (I-VTR) is an online application that facilitates the review of GHG inventories of Annex I Parties by providing a collaborative and shared environment. The I-VTR supports enhancing the consistency, timeliness and

³² <http://unfccc.int/9560>.

³³ Decision 13/CP.20, paragraphs 4 and 6.

³⁴ See the annex, paragraphs 23.

efficiency of the review process by facilitating the work and the exchange of information between ERTs, Parties and the secretariat before, during and after the review week. The I-VTR provides a platform where all users can: share issues identified and store documents used in reviews; raise technical questions to clarify issues and exchange information and documents; and prepare the review reports collaboratively (including monitoring the progress of report preparation).

56. Considering that the LRs recognized the benefits of using the I-VTR in the review process at their 14th meeting, the review experts, Parties and the secretariat continued to use the I-VTR during the 2017 review cycle, which significantly improved the efficiency of conducting the reviews. As also requested by the LRs at their 14th meeting, the secretariat further enhanced the I-VTR for the 2017 review cycle and received positive feedback during the reviews from experts and Parties.

Annex

Conclusions and recommendations from the 14th meeting of greenhouse gas inventory lead reviewers, held in Bonn on 8 and 9 March 2017

1. The 14th meeting of greenhouse gas (GHG) inventory lead reviewers (LRs) was held in Bonn, Germany, on 8 and 9 March 2017. A total of 37 experts from Parties not included in Annex I to the Convention (non-Annex I Parties) and 49 experts from Parties included in Annex I to the Convention (Annex I Parties) were invited to the meeting. Of the 67 experts who attended, 31 were from non-Annex I Parties and 36 were from Annex I Parties. The secretariat held a refresher seminar for LRs and experienced reviewers on the morning of 8 March 2017, before the LRs meeting, which was attended by 64 experts (30 from non-Annex I Parties and 34 from Annex I Parties). The refresher seminar focused on: experiences from desk reviews (DRs) and in-country reviews (ICRs) of GHG inventories in 2016; improving the drafting of findings and recommendations in annual review reports (ARRs); efficient simultaneous use of the review issues tracking system (RITS) and the ARR template; and reviewing the information on land use, land-use change and forestry (LULUCF) activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol (KP-LULUCF) in the second commitment period.

2. In accordance with decisions 13/CP.20, 22/CMP.1 and 24/CMP.1, the meeting facilitated the work of LRs in fulfilling their task to ensure the consistency of reviews across all Parties and provided suggestions on how to improve the quality and efficiency of the reviews. These conclusions and recommendations will be reported to the Subsidiary Body for Scientific and Technological Advice (SBSTA), in accordance with the annexes to decisions 13/CP.20 and 22/CMP.1 in conjunction with decision 4/CMP.11. Such reports provide the SBSTA with inputs for providing further guidance to the secretariat on the selection of experts and the coordination of the expert review teams (ERTs) and the expert review process. In addition, decision 13/CP.20 invites LRs to provide guidance on such matters as review tools, materials and templates,¹ as well as to provide suggestions on how to improve the quality, efficiency and consistency of the reviews.²

I. Coordination and planning of the 2017 review cycle

3. The LRs noted that the 2016 review cycle involved an exceptional number of experts and resources and an exceptional number of reports prepared, including two ARRs and one initial review report for most Parties to the Kyoto Protocol. This resulted in the use of some of the financial resources initially planned for the 2017 review cycle. The fact that some resources have already been used creates constraints for the secretariat's ability to organize the 2017 review cycle fully in accordance with the relevant mandates (decisions 13/CP.20, 22/CMP.1 and 4/CMP.11). The LRs noted with concern that there are insufficient resources from the core budget of the secretariat to organize the 2017 review cycle fully in accordance with relevant mandates.

4. The LRs noted the plans of the secretariat for GHG inventory reviews for 2017, taking into consideration the challenges indicated in paragraph 3 above and the need to follow relevant mandates referred to in that paragraph. The LRs noted that the secretariat plans to organize the 2017 review cycle fully in accordance with the relevant mandates, depending on the availability of supplementary resources. In addition, the LRs also understood the need for and noted the alternative plans of the secretariat, such as reviewing only submissions by half of the Parties in the 2017 review cycle, if the supplementary resources are not made available. In any cases, annual submissions by all Parties will

¹ Decision 13/CP.20, annex, paragraph 48.

² Decision 13/CP.20, annex, paragraph 44.

undergo an initial assessment (resulting in both status and assessment reports by the secretariat).

5. The LRs noted the need for Parties in a position to do so to provide support in terms of supplementary funding for projects related to Annex I GHG inventory reviews by the end of April 2017 at the latest, to facilitate the efficient organization of the 2017 review cycle, and in order to review all submissions made by Annex I Parties.

6. The LRs also requested the secretariat to inform Annex I Parties as early as possible, but no later than 31 May 2017, on the plans for the 2017 review cycle, including which Parties will be invited to host an in-country review.

7. The LRs noted that an update of the CRF Reporter was available in 2016 for the 2017 reporting cycle, which will facilitate timely reporting by Parties and will facilitate the timely organization of the 2017 review cycle. The LRs also noted the presentation by the secretariat during the 14th meeting on how it plans to further enhance the CRF Reporter, in terms of user-friendliness with a view to further facilitating the compilation of GHG inventories, subject to the availability of funds.

8. The LRs noted with concern that there are insufficient resources from the core budget of the secretariat to organize the 2017 review cycle fully in accordance with the relevant mandates as well as to continue and strengthen the implementation of the training programme (see para. 18 below). The LRs requested the secretariat to prioritize the available resources for activities related to the review of the GHG inventories of Annex I Parties from the core budget and supplementary funding for these two core activities.

Specific issues regarding desk reviews

9. The LRs noted the importance of the continuous collection of experience on the organization of DRs in order to provide information to the SBSTA for the consideration of such experiences at its forty-eighth session (April–May 2018). In accordance with paragraph 15 of decision 13/CP.20, the LRs considered the experiences of DRs during the 2016 review cycle and noted positive experiences, but also noted some of the difficulties in organizing such reviews, such as the availability of experts and achieving geographical balance in ERTs. The LRs also noted that DRs may be most effective when the GHG inventories are sufficiently advanced and there are no major problems or gaps. The LRs also noted that the scope of DRs, as contained in decision 13/CP.20, annex, paragraph 76, is limited compared with that of centralized reviews and ICRs.

10. The LRs discussed different approaches to performing DRs, by considering the experience from the 2015 and 2016 review cycles, that may benefit the organization and operationalization of DRs, including: the duration and focus of DRs; the application of information technology tools to ensure successful implementation of the reviews; the ARR template for DRs; and the composition of the ERTs. The LRs invited the secretariat to consider the outputs of these discussions in the organization of reviews for the 2017 review cycle and consider the DR option further at the next meeting of LRs, taking into consideration the additional experience gained in 2017.

11. The LRs noted the need for Parties to encourage and facilitate the participation of experts that they nominated to take part in DRs, noting that without greater support from Parties to experts it will be very hard for the secretariat to organize DRs.

II. Training and availability of review experts

12. The LRs welcomed the information on training activities undertaken by the secretariat in 2016 and planned training activities in 2017. The LRs noted that the update and launch of the “Training programme for members of expert review teams participating in annual reviews under Article 8 of the Kyoto Protocol” (annex to decision 5/CMP.11) (hereinafter referred to as the updated Kyoto Protocol training programme) was made available online in time for the first review under the second commitment period of the Kyoto Protocol as requested by decision 5/CMP.11. The LRs also welcomed the

organization of the refresher seminar held prior to the 14th meeting of LRs on: experiences from reviews of GHG inventories in 2016; improving the drafting of findings and recommendations in ARRs and the use of the RITS; and the review of KP-LULUCF activities in the second commitment period of the Kyoto Protocol.

13. The LRs noted that not all experienced LULUCF experts who participated in reviews in 2016 have met the mandatory requirement, for both new and experienced LULUCF reviewers, to pass the examination of the “Review of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol” of the updated Kyoto Protocol training programme. The LRs invited all such LULUCF experts and new LRs to fulfil this mandatory requirement, as early as possible, if they have not yet done so, with a view to taking part in the reviews and contributing to the quality of the review process under the Kyoto Protocol.

14. The LRs noted the importance of the “Training programme for review experts for the technical review of greenhouse gas inventories of Parties included in Annex I to the Convention” (annex to decision 14/CP.20) (hereinafter referred to as the GHG inventory reviewers training programme), which has the objective of facilitating review experts to possess appropriate technical knowledge and skills for the technical review of information reported under the Convention related to GHG inventories.

15. The LRs recognized the importance of the training courses and their examinations among ERT members, in particular experienced review experts, and reiterated their strong encouragement that experienced review experts, in particular LULUCF experts and LRs, undertake at their earliest convenience, the relevant courses and examinations of the GHG inventory reviewers training programme and the updated Kyoto Protocol training programme and use the opportunities for experienced review experts planned by the secretariat before the 2017 GHG inventory review cycle starts.

16. The LRs welcomed the information presented by the secretariat on the implementation of the GHG inventory reviewers training programme and noted that the secretariat has received positive feedback from the Parties and experts on this programme, including on the scope and focus of its courses, and the final examinations. The LRs noted that it is still too early to draw conclusions on the effectiveness of the training programme based on the ongoing experience of the 2016 review cycle and the limited experience of the 2015 review cycle. Therefore, the LRs considered that the implementation of the GHG inventory reviewers training programme should be extended until any enhancement or further development of the courses of the GHG inventory reviewers training programme is considered and agreed by the SBSTA.

17. The LRs reiterated the importance that Parties nominate experts with experience in GHG inventories, including robust general and sectoral technical expertise, to the UNFCCC roster of experts and regularly update their nominations. The LRs also reiterated the importance of the support from Parties to ensure that their experts can complete the required training programmes, in order to have more qualified reviewers available for the GHG inventory review process.

18. The LRs acknowledged the resource constraints, both human and financial, in the secretariat and encouraged Parties to continue to support the training activities by providing sufficient resources to continue and strengthen the implementation of the training programme and for undertaking any enhancements of the GHG inventory reviewers training programme as referred to in paragraph 16 above.

III. Guidance on the development of review tools and materials

A. Review tools and materials

19. The LRs noted that the development of the new data warehouse with GHG emission data from the Parties' GHG inventory submissions is still ongoing and could not be completed because of insufficient funding. They also noted that this affects the functioning of the review tools, the GHG data interface, the status reports under both the Convention

and the Kyoto Protocol, and the aggregate GHG information that are linked to the data warehouse.

20. The LRs noted that the review tools – Locator, Comparison tool, SCOT (submission comparison tool), 7% tool, 2% tool, key category analysis tool and SODT (statistical outlier detection tool) – were improved following the recommendations from the 11th and 12th meetings of the LRs, and have been used during the 2016 review cycle. The LRs also noted that the overall functionality of these tools remained unchanged after they were integrated into the new data warehouse.

21. Considering the feedback received from experts during the 2016 review cycle, the LRs noted the plan of the secretariat to further enhance some of the review tools, namely the Locator and the comparison tool, and welcomed the plan for involving a group of LRs/ERTs in the testing of the enhanced tools. The LRs noted that user manuals on the review tools are under preparation by the secretariat in response to the recommendations from the 12th and 13th meetings of LRs and that these manuals are planned to be made available in advance of the launch of the 2017 review cycle.

22. The LRs noted that, because of the lack of financial resources, the secretariat may not be in a position to implement the planned enhancements of all the review tools. To that end, the LRs requested that the Locator be given priority.

B. Status report

23. Regarding the standardized set of data comparisons, the LRs noted that the consistency checks in the status reports have been implemented in line with the recommendations from the 13th meeting of LRs.³ The LRs also noted the implementation of the recommendation from the 13th meeting of LRs regarding highlighting, in the status reports, the missing information identified in the status report.

24. In addition, the LRs requested the secretariat to invite a group of experienced reviewers among the LRs to conduct an assessment of the standardized data comparisons. For this purpose, it requested that the secretariat set up all necessary arrangements to further proceed on that matter, and to report back at the 15th meeting of the LRs.

C. Aggregate greenhouse gas information

25. In order to streamline the aggregate GHG information, the secretariat circulated a questionnaire to experienced reviewers, and compiled and presented the results in accordance with the recommendation from the 12th meeting of LRs. Owing to the low response rate of the questionnaire and in line with the recommendation from the 13th meeting of LRs, the secretariat provisionally implemented its streamlining proposal for the 2016⁴ review cycle. In addition, and as recommended by the LRs, the same process of consultations was extended until December 2016.

26. The LRs agreed on the streamlining of the aggregate GHG information and recommended that the aggregate GHG information remains as per the version published for the 2016 review cycle.

D. Inventory virtual team room

27. The LRs noted that around 300 experts, LRs, review officers and Party representatives have used the revised GHG Inventory Virtual Team Room (I-VTR) during the 2016 review cycle. The LRs also noted that almost all teams (20 out of 21) have used the question and answer module of the I-VTR, and half of the teams have used the RITS

³ http://unfccc.int/files/national_reports/annex_i_ghg_inventories/review_process/application/pdf/asr_sample_template_from_lr13.pdf.

⁴ <http://unfccc.int/resource/webdocs/agi/2016.pdf>.

and report preparation modules. Considering that 80 per cent of the users who participated in a survey after the 2016 review cycle found the I-VTR system “easy” or “very easy” to use, and that more than half consider that the I-VTR “improves the efficiency in conducting the review”, the LRs recognized the benefits of using the I-VTR in the review process.

28. The LRs also noted the essential role that LRs play in promoting the use of specific functions of the I-VTR (e.g. the questions and answers between ERTs and Parties, finding and tracking issues in a single database to ensure consistency and collaboratively preparing the ARR) and requested the secretariat to identify possibilities to further enhance the I-VTR for the next review cycle. The LRs noted the need for Parties to support further development of the I-VTR by providing additional financial resources.

E. Other review materials

29. The LRs welcomed the update of the *Handbook for review of national GHG inventories* (hereinafter referred to as the Review Handbook), to reflect decisions 24/CP.19, 13/CP.20, 2/CMP.7, 6/CMP.9, 3/CMP.11 and 4/CMP.11 and the Intergovernmental Panel on Climate Change (IPCC) *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol* and the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*.

30. The LRs agreed that the draft Review Handbook is a useful resource for both new and experienced reviewers and recognized it as a source when providing guidance to ERTs. The LRs were encouraged to provide comments thereon by 15 April 2017.

31. The LRs took note of the background paper by the secretariat on improving the drafting of findings and recommendations, prepared for the refresher seminar for experienced GHG reviewers.

32. The LRs also welcomed the compilation by the secretariat of all reporting, review and accounting requirements relating to the second commitment period of the Kyoto Protocol in a user-friendly document (i.e. the consolidated decisions from the second commitment period).⁵

33. The LRs welcomed the update of the *Kyoto Protocol Reference Manual* for the second commitment period of the Kyoto Protocol. The LRs agreed to provide comments by 15 April 2017 on this update. The LRs recommended that the secretariat finalize the document and make it available on the UNFCCC website.

34. The LRs agreed to encourage ERTs to use these materials and requested the secretariat to include the documents referred to in paragraphs 29–32 above in the package of review materials delivered to ERTs at least one month prior to the start of each review week during the 2017 review cycle, and make the package of review materials available to Parties.

IV. Improvements to the quality, efficiency and consistency of reviews, in accordance with decisions 13/CP.20 and 4/CMP.11

35. The LRs reaffirm their role in leading ERTs and the review process, ensuring the quality and consistency of the reviews and supporting new experts. The LRs recognized the need for LRs to support and guide ERTs, particularly on KP-LULUCF issues,⁶ during the first years of the use of the new “Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories” (annex to decision 24/CP.19) and the new “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex

⁵ Available at <http://unfccc.int/9501>.

⁶ Decisions 2/CMP.7 and 6/CMP.9.

I to the Convention, Part III: UNFCCC guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention” (annex to decision 13/CP.20). The LRs also recognized their role in promoting the use of tools and materials and the need to follow up on the quality assurance process.

36. The LRs discussed specific ways to improve the consistency and efficiency of the review process based on the experiences from the 2016 reviews and the background paper on consistency prepared by the secretariat. In particular, the LRs recommend that LRs promote the following procedures:

(a) Initiating the review of GHG inventory submissions by ERTs at least one month before the review week;

(b) Dedicating more time early in the review week to the consideration of issues and the general assessment (chapter “Summary and general assessment of the annual submission” in the ARR, potential questions of implementation, recommendation for an exceptional in-country review, Saturday Papers and key issues);

(c) If recommending that the next review for a Party be conducted as an ICR, including in an annex to the ARR a summary of the rationale supporting the need for an ICR and highlighting particular issues from the current ARR conducive to further discussion in the ICR;

(d) Streamlining the preparation and population of the RITS and drafting of ARRs during the review week;

(e) Enhancing the efficiency of the review process by including the main substantive findings in the ARRs and keeping minor findings, typos and editorial issues in the RITS;

(f) Confirming that, with respect to the application of the significance threshold in paragraph 37(b) of the annex to decision 24/CP.19:

(i) The threshold applies to both source and sink categories;

(ii) A category not reported by the Party in its annual submission, but which is demonstrated to be insignificant during the review week, is not to be included in the Saturday Paper;

(iii) Potential problems identified by the ERT that would result in an adjustment less than the thresholds given in paragraph 37(b) of the annex to decision 24/CP.19 should not be included in the Saturday Paper.

37. When reviewing KP-LULUCF activities for Parties with commitment period accounting, not raising accounting issues for KP-LULUCF in the Saturday Paper in years prior to the final year of the commitment period, since they do not have accounting implications and the issues will still appear in the ARRs and would be highlighted in the reports if they are not solved within three submissions.
