



FCCC/WEB/SAI/2000

13 July 2001

**SYNTHESIS AND ASSESSMENT REPORT OF GREENHOUSE GAS (GHG)
INVENTORIES SUBMITTED IN 2000¹**

Note by the secretariat

CONTENTS

	Page
I. INTRODUCTION	2
A. Mandate	2
B. Scope of the note	3
C. Possible action by Parties	4
D. Approach	4
E. Limitations on this first synthesis and assessment report	4
II. SECTION I: Comparison of greenhouse gas inventory information across Parties	7
A. Overview	7
1. Introductory notes	7
2. Status of reporting GHG inventories in the year 2000	9
3. Summary of key sources	13
4. Comparison of GHG estimates with previous submissions/ recalculations	16
B. Sectoral tables	17
1. Energy	17
2. Industrial processes	43
3. Agriculture	57
4. Waste	68

¹ In the document symbol, 2000 refers to the year the inventories were submitted and not to the year of publication.

III. SECTION II: Preliminary findings on individual national GHG inventories ..71

Australia	71
Austria	78
Belgium	85
Bulgaria	88
Canada	92
Czech Republic	99
Finland	105
Greece	109
Hungary	113
Ireland	121
Italy	125
Japan	129
Latvia	137
Lithuania	142
Netherlands	146
New Zealand	152
Norway	159
Slovakia	166
Spain	170
Sweden	174
Switzerland	181
United Kingdom	185
United States of America	194

I. INTRODUCTION

A. Mandate

1. The Conference of the Parties (COP), at its fifth session, by its decision 6/CP.5, adopted the guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention,² (hereinafter referred to as “the review guidelines”), for a trial period covering inventory submissions due in 2000 and 2001 (FCCC/CP/1999/6/Add.1).

2. At the same session, by its decision 3/CP.5, the COP also adopted guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories,² (hereinafter referred to as “the reporting guidelines”) (FCCC/CP/1999/6/Add.1). These guidelines should be used by Parties included in Annex I to the Convention (Annex I Parties) for reporting inventories due by 15 April each year, beginning in the year 2000.³

² The full text of the guidelines is contained in document FCCC/CP/1999/7.

³ The Subsidiary Body for Implementation (SBI), at its tenth session, set up a two-year trial period beginning in early 2000 to assess those guidelines, particularly the common reporting format (CRF), with a view to revising them at COP 7, taking into consideration, *inter alia*, experience gained by Parties and the secretariat, and the input of the IPCC.

3. By its decision 6/CP.5, the COP requested the secretariat to conduct annual synthesis and assessment of greenhouse gas (GHG) inventories for all Annex I Parties, in accordance with the provisions of the review guidelines. The purposes of the synthesis and assessment are to facilitate the consideration of inventory data and other information across Parties, and to identify issues for further consideration during the review of individual inventories, namely desk reviews, centralized reviews and in-country reviews.

4. In accordance with the review guidelines the synthesis and assessment should be conducted by the secretariat in two phases, with the assistance of experts selected for the second phase. The results of this stage of the review will be published on the United Nations Framework Convention on Climate Change (UNFCCC) web site as a synthesis and assessment report, divided into two sections and an addendum. The first section will provide information allowing comparisons across Annex I Parties and describe common methodological issues. The second section will contain a preliminary analysis of individual Annex I Party inventories, in particular, to identify outstanding issues requiring clarification during the individual review stage of the process. The addendum will contain tables and graphs based on Annex I Party inventory data.

B. Scope of the note

5. This synthesis and assessment report responds to the mandate described in paragraphs 3 and 4 above. It contains the first and the second section of the synthesis and assessment report, covering the national GHG inventories submitted in 2000 by those Annex I Parties that used the common reporting format (CRF) in accordance with the reporting guidelines. The report presently does not contain an addendum. However, inventory data, in tabular and graphical format, were prepared by the secretariat using the submissions of Parties for the year 2000 and were published in documents FCCC/SBI/2000/11⁴ and FCCC/SBI/2000/INF.13.⁵ These documents can be regarded as a substitute for the addendum to this report.

6. This synthesis and assessment report focuses on the inventory information submitted in the CRF and does not provide a comprehensive assessment of the national inventory reports, which have been provided by some Annex I Parties as part of their annual inventory submission.

7. The preliminary findings included in the second section are the result of the analysis of the CRF data, taking into account additional information in the national inventory report (NIR) where applicable, performed by the secretariat and the experts who participated in the second phase of the synthesis and assessment. These comments and questions are not intended as a judgement of whether inventory problems exist, but are provided as an indication of potential issues that need to be considered further during the third stage of the review process (individual review of inventories) by the expert review teams.

8. The secretariat hopes that the synthesis assessment of GHG inventories will also assist in assessing the usefulness of the reporting guidelines, in particular the CRF for supporting the technical review of GHG inventories and will provide useful input to the possible revision of these reporting guidelines by the COP.

⁴ See also FCCC/SBI/2000/11/Corr.1 and 2.

⁵ These documents contain information from all Annex I Parties that submitted inventories in the year 2000, no matter whether they reported the inventory data using the CRF or not.

C. Possible action by Parties

9. Parties may wish to communicate to the secretariat their views on the content, extent and layout of the first synthesis and assessment report of GHG inventories.

D. Approach

10. The analysis of the inventory data was done according to the sectors, sub-sectors and source categories which are specified in the CRF and which correspond to those of the Revised 1996 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories, hereinafter referred to as the IPCC Guidelines. For the land-use change and forestry sector, tables for comparing data across Parties were not included in section I of this report due to limited disaggregated data reported by Parties. Any comments on this sector were incorporated in section II for each Party individually.

11. To facilitate the analysis of the inventory data, the secretariat considers, for each individual Party, those source categories that are *key sources* in terms of their absolute level of emissions, applying the Tier 1 level assessment as described in the IPCC good practice guidance.⁶ With regard to categories, this identification has been performed at the level of detail recommended in that guidance.⁷ The sector land-use change and forestry has not been included in the calculation of the key source calculations.⁸ For the purpose of this report, no other criteria for identifying *key sources* as described in the IPCC good practice guidance, such as trend assessment, have been considered. Such an assessment would only have been possible for a very limited number of Parties that, in addition to the 1998 CRF, had also provided information according to the entire CRF for 1990.

E. Limitations on this first synthesis and assessment report

12. The completeness and the scope of this report are affected by the fact that only 23 out of 40 Annex I Parties submitted their inventory using the CRF and by the limited information provided by many of these Parties using the CRF for the first time (see page 9 of this report).⁹

13. Generally, in section II of the report, more issues were identified, compared for those Parties that provide a more complete inventory submission to those Parties that provide less data. This does not mean that the quality of the submissions was lower the more issues were identified that required clarification. Quite the opposite, the information provided in this report to the expert review teams for performing their tasks will be more useful for the review of the inventory data of those Parties that provided more complete data.

⁶ Chapter 7 “Methodological choice and recalculation” of the IPCC Good Practice Guidance and Uncertainty Management, hereinafter referred to as the IPCC good practice guidance.

⁷ For some Parties identification of key sources at that level of detail was not possible due to lack of reporting disaggregated data. For these Parties, key sources have been identified at the level of category disaggregation as provided in Summary table 1.A of the CRF (corresponds to summary Table 7A of the IPCC Guidelines).

⁸ Emissions and removals associated with carbon stocks in land-use, land-use change and forestry were not addressed in the current report of the IPCC good practice guidance. A separate IPCC report on good practice for this sector is planned.

⁹ It should, however, be noted that the reporting guidelines were adopted in November 1999 when most Parties were already in the process of preparing their 2000 submission. It is expected that Parties provide more complete information in their 2001 submissions due to the fact they will have adequate time to prepare them and will have acquired experience in the use of the reporting guidelines and the CRF.

Phase I of the synthesis and assessment

14. To facilitate the review of the GHG inventory data reported by Annex I Parties, the secretariat developed a database for processing and storing data submitted electronically in the CRF tables. Other software tools and specific queries for retrieving and viewing the data stored in the database were also developed in order to facilitate the process of analysing the inventory data during the various stages of the review process. The data management and processing tools are still under development.¹⁰

15. During the first phase of the synthesis and assessment, which took place from 19 February to 3 March 2001, the secretariat compiled the information provided by Parties using the CRF and elaborated a proposal for the synthesis and assessment report. This included a preliminary draft of section I of the synthesis and assessment report, that consisted of a set of data tables to allow comparison of inventory information across Parties, and a preliminary country-by-country analysis for section II of the report.

16. For *key sources*, implied emission factors and other methodological information were compared across Parties and, where possible, against default emission factors from the IPCC. For the detection of potential issues in the inventory data comparisons, a preliminary statistical analysis of the data has been performed. For some source categories for which international data sources are available, activity data reported by Parties were compared with data from international data sources, such as United Nations (UN), International Energy Agency (IEA), and Food and Agriculture Organization (FAO) statistics. An assessment of emissions trends and implied emission factors from 1990 to 1998 was performed, where possible. Furthermore, the inventory data submitted in 2000 were compared with data in previous inventory submissions. Where possible, the national inventory report, or any other accompanying textual information, were used to assess the consistency of the provided information. Specific data checks were also carried out to verify the consistency of the reported data, detect omissions and other problems related to an inappropriate use of the CRF.

Phase II of the synthesis and assessment

17. The second phase of the synthesis and assessment exercise took place from 5 to 9 March 2001 in Bonn, with the participation of six national inventory experts from the roster of experts and one expert from an international organization. The experts invited were Michael Gillenwater (United States), Alexander Nakhutin (Russian Federation), Todd Ngara (Zimbabwe), Jos Olivier (Netherlands), Newton Paciornik (Brazil), Kristin Rypdal (Norway) and Karen Treanton (International Energy Agency). They had been selected according to their expertise in inventory preparation taking into account geographical balance.

¹⁰ It is possible that some errors may have crept into the data compilations provided in section I of this report, despite various checking procedures put in place by the secretariat.

18. The main task of the experts consisted in assisting the secretariat in facilitating the consideration of inventory data and other information across Parties, and in identifying potential issues for further consideration during the review of individual inventories. Mainly, they were asked to provide advice on:

(a) The outline and the content of the preliminary draft of section I of the synthesis and assessment report; and

(b) The findings of potential problems included in the preliminary country-by-country analysis of section II of the report.

19. Experts were allocated to work according to inventory sectors in accordance with their expertise. In reviewing all 23 inventory submissions for their specific sector in order to perform the above-mentioned task, they assessed to what extent specific data comparisons of section I of the report were useful and feasible for the identification of specific potential inventory issues, and, consequently, developed additional specialized data comparison queries by sector where needed. The potential issues included in the preliminary country-by-country analysis of section II were considered, assessed and completed based on any new findings identified during this second phase.

20. Inputs received during the second phase of the synthesis and assessment have been taken into account in this report to the extent this was possible. Some suggestions that were not taken into account due to time constraints will be considered for the synthesis and assessment of the 2001 inventory submissions.

21. Section I of the draft synthesis and assessment report was sent to Parties for their comments, together with the corresponding preliminary findings on the individual Party's GHG inventory (section II). Fourteen Parties (Australia, Austria, Canada, Czech Republic, Hungary, Japan, Latvia, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom and United States of America) responded to the draft synthesis and assessment report. Any additional information and clarifications contained in the Party's comment in response to the findings have been added below the original finding using *bold italic* font, quoting as closely as possible the text provided by the Party. However, retroactive corrections to the data have not been taken into account in the respective tables of section I, but have been reflected accordingly in section II of this report.

22. For those Parties whose GHG inventory was subject to an individual review,¹¹ the answers to the preliminary findings were provided to the experts review teams for their consideration.

¹¹ Parties whose GHG inventory submitted in 2000 was subject to an individual review using various approaches were: Australia (centralised and in-country), Canada (centralised), Hungary (centralised), Japan (centralised), Netherlands (desk and centralised), New Zealand (desk, centralised and in-country), United Kingdom (in-country), and the United States of America (desk and in-country).