



Committee on Earth Observation Satellites

UNFCCC and IPCC Engagement Status

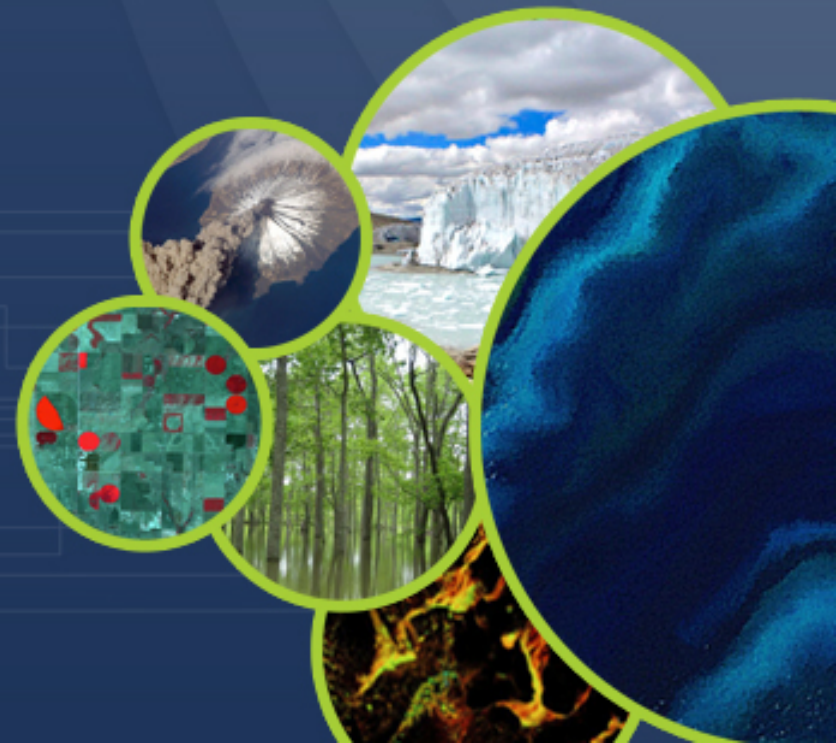
Yoshiaki Kinoshita, Director of JAXA Paris Office

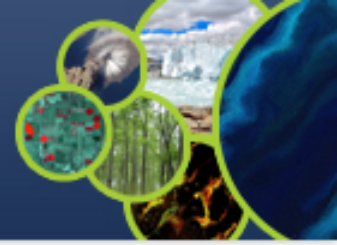
13th CEOS Atmospheric Composition Virtual

Constellation (AC-VC) Meeting

CNES Headquarters, Paris, France

28th-30th June 2017





SIT Technical WS in Oxford in September 2016

- JAXA stressed the importance of 2006 IPCC Guidelines for National Greenhouse Gas Inventories which will be refined in 2019.
- During Climate & Carbon session, JAXA proposed CEOS engagement with IPCC and UNFCCC as one of WG and VC initiatives of carbon.

30th CEOS Plenary in Brisbane in October 2016

- The Plenary agreed on the initial selection of WG and VC initiatives including engagement with IPCC and UNFCCC.

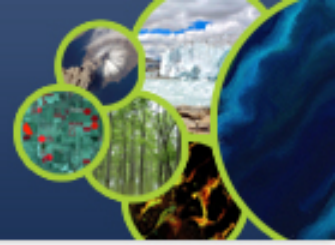
COP-22 in Marrakech in November 2016

- Ministry of Environment, Japan (MOE) and JAXA organized the side event on GHG monitoring from space inviting speakers from IPCC/TFI, GCOS, NIES, NASA, and CNES.

SIT-32 in Paris in April 2017

- JAXA held a side meeting to share information about refinement schedule of the IPCC guidelines on National Greenhouse Gas Inventories and Japanese efforts for the guidelines; and to discuss **how satellite GHG data support accuracy of National GHG inventories**
- CEOS agreed to provide **review of and input to, via the AC-VC, “Methodology Document”** developed by MOE/NIES.

- Currently, the refinement of “2006 IPCC Guidelines for National Greenhouse Gas Inventories” is underway.
- The guidelines provide methodologies for estimating national inventories of anthropogenic emissions by sources and removals by sinks of GHG.
- The current guidelines 2006 indicates that each country preferably **use independent data to verify GHG inventories**, and also indicates that **satellite data has limitations in spatial, vertical and temporal resolution**.

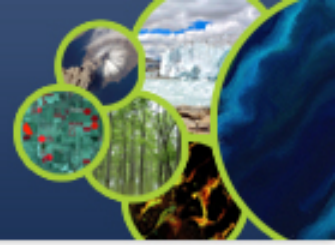


Volume 1: General Guidance and Reporting

Chapter 6 QUALITY ASSURANCE/QUALITY CONTROL AND VERIFICATION

6.10.2 Comparisons with atmospheric measurements

“..... Even the availability of **satellite-borne sensors** for greenhouse gas concentration measurements (see Bergamaschi *et al.*, 2004) will not fully resolve this problem, **due to limitations in spatial, vertical and temporal resolution.**”

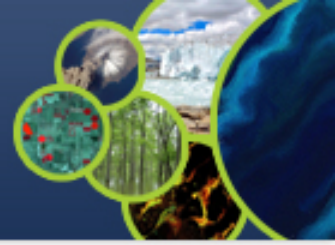


IPCC-43 Kenya, April 2016

Decision IPCC/XLIII-8. Update of methodologies on National Greenhouse Gas Inventories

The Intergovernmental Panel on Climate Change decides:

To approve the proposal on “Refinement of 2006 IPCC Guidelines for National Greenhouse Inventories, including production of a Methodology Report(s)” as contained in Annex 1 to this Decision.

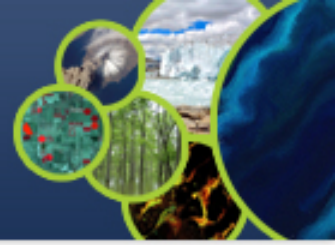


(Annex1 to Decision IPCC/XLIII-8)

“Refinement of 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Including production of a Methodology Report(s)”

1. The 26th Meeting of Task Force Bureau (TFB) (28-29 August 2014, Ottawa) concluded that:

- The 2006 IPCC Guidelines for National Greenhouse Gas Inventories (2006 IPCC Guidelines) provide a technically sound methodological basis of national greenhouse gas inventories, and therefore fundamental revision is unnecessary.
- To maintain the scientific validity of 2006 IPCC Guidelines, **certain refinement may be required**, taking into account **scientific and other technical advances that have matured sufficiently since 2006.**”



IPCC-44 Bangkok, October 2016

Decisions adopted by The Intergovernmental Panel on Climate Change
P. 20

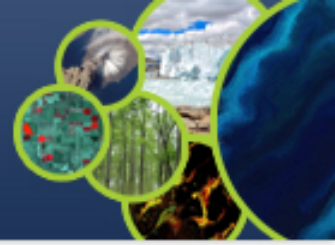
“2. To adopt the terms of reference for the production of a methodology Report to refine the 2006 IPCC Guidelines for National Greenhouse Gas Inventories as contained in Annex1 to this Decision.”

ANNEX1 Appendix: Instructions to Experts and Authors

Principles of the new methodology Report

20. Guidance in the new methodology Report should be..... In particular:

- b. Lead authors must consider **all recent scientific developments and national methods** used by countries in their inventories.



ANNEX2 Draft Table of Contents

2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories

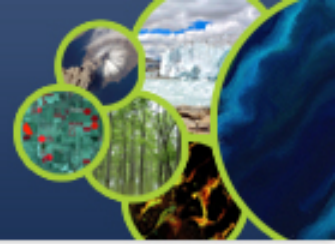
Volume 1: General Guidance and Reporting

Chapter 6: Quality Assurance/Quality Control and Verification

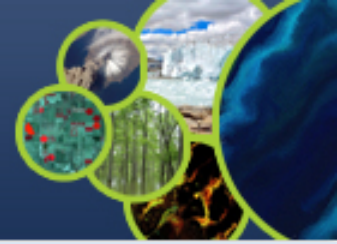
Issue: Update/elaborate verification guidance because the existing guidance is outdated (especially the guidance on comparisons with atmospheric measurements and new datasets).

Location in 2006 IPCC Guidelines: Section 6.10

Type of refinement: Update/Elaboration



| | |
|------------------------|---|
| 2016 Sep | Scoping Group meeting |
| 2016 Oct | IPCC decision on outline |
| 2017 Feb | Decision on selection of Authors |
| 2017 Jun | First Lead Author Meeting (LAM1) |
| 2017 Sep | Second Lead Author Meeting (LAM2) |
| 2017 Dec – 2018 Feb | First Order Draft (FOD) Expert Review |
| 2018 Mar | Science Meeting |
| 2018 Apr | Third Lead Author Meeting (LAM3) |
| 2018 July - Sep | Second Order Draft (SOD) Government & Expert Review |
| 2018 Oct | Fourth Lead Author Meeting (LAM4) |
| 2019 Jan - Mar | Final Government Distribution (FGD) Government Review |
| 2019 May | IPCC adoption/acceptance |



IPCC Guidelines (to be refined in 2019)



Methodology document



Satellite-based GHG Data

Develop methodology document to support for national statistician to use GHG data for the accuracy of the greenhouse gases inventory.

◆ Review

- ◆ Provide high accurate data set and documents (ATBT)
- ◆ Calibrations and validation for quality control

CEOS

Provide and share GHG data

Ministry of Environment/
NIES



Ministry of Education,
Sports, Culture,
Science and
Technology

JAXA
GOSAT/
GOSAT-
2(*)

NASA
OCO-2

ESA
Sentinel-
5

CNES
MicroCar
b

DLR/
CNES
MERLIN

CMA
TanSat

Space Agencies

*GOSAT/GOSAT-2 are joint projects by Ministry of Environment, NIES and JAXA

- MOE aims to have the refined IPCC GHG Inventory Guidelines refer satellite-based GHG data to **enable all countries utilize the data for helping national reports on GHG emissions.**
- MOE is developing a document about **methodologies to estimate anthropogenic GHG emissions with satellite data** as an input to IPCC/TFI guidelines 2019 to support accuracy of national GHG inventories.
- MOE/JAXA highly appreciates CEOS's review on the draft of methodology document when it is opened to the public **in September 2017**
- **International coordination to build consensus advice on use of satellite information into the IPCC process will be necessary.** Space Agencies should show **technical and scientific advancements of satellite GHG observations** which have been made since 2006.