Introduction to the *Wetland Supplement*

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Outline

❖ Background

❖ Production of *Wetlands Supplement*

❖ Contents of *Wetlands Supplement*

❖ Summary
Introduction to the Wetlands Supplement
Background
IPCC Guidelines for National GHG Inventories

- IPCC Task Force on National Greenhouse Gas Inventories (TFI) produces guidelines on compiling estimates of national greenhouse gas emissions and removals in a standardized way to ensure transparency, accuracy, completeness, consistency and comparability between countries.

- The IPCC Guidelines are intended to be used by all Parties to the UNFCCC:
  - They provide default data and methods
  - They allow the use of more sophisticated methods if countries wish to use them and they are consistent with the guidelines.

- Until now the Revised 1996 Guidelines and Good Practice Guidance (2000, 2003) have been used, for estimates for 2013 onwards the 2006 Guidelines should be used by Annex I Parties.
2006 IPCC Guidelines for National Greenhouse Gas Inventories

- Overview
- Vol 1: General Guidance and Reporting
- Vol 2: Energy
- Vol 3: Industrial Processes and Product Use (IPPU)
- Vol 4: Agriculture, Forestry and Other Land Use (AFOLU)
- Vol 5: Waste
Vol.4 AFOLU: Six land-use categories

Stock changes of C pools are estimated and reported for the six “top-level” land-use categories

Subdivide according to national circumstances
## Guidance on wetlands in 2006 IPCC Guidelines

<table>
<thead>
<tr>
<th>Land-use category/GHG</th>
<th>Peatlands</th>
<th>Flooded Land</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wetlands Remaining Wetlands</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂</td>
<td>Section 7.2.1.1</td>
<td>No Guidance (Included Elsewhere)</td>
</tr>
<tr>
<td>CH₄</td>
<td>No Guidance (Assumed Negligible)</td>
<td>Appendix 3</td>
</tr>
<tr>
<td>N₂O</td>
<td>Section 7.2.1.2</td>
<td>No Guidance (Included Elsewhere)</td>
</tr>
<tr>
<td><strong>Lands Converted to Wetlands</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂</td>
<td>Section 7.2.2.1</td>
<td>Section 7.3.2.1 and Appendix 2</td>
</tr>
<tr>
<td>CH₄</td>
<td>No Guidance (Assumed Negligible)</td>
<td>Appendix 3</td>
</tr>
<tr>
<td>N₂O</td>
<td>Section 7.2.2.2</td>
<td>No Guidance (IncludedElsewhere)</td>
</tr>
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Need for Additional Guidance

• When the TFI produced the *2006 IPCC Guidelines* it was only possible to provide guidance on a few wetland types: organic soils (mainly drained peatlands), peatlands managed for peat extraction, and limited guidance on flooded lands.

• Since then scientific knowledge has increased and the IPCC has decided it is now time to cover these missing wetlands types.

• In addition, the UNFCCC has decided to include *Wetlands Drainage and Rewetting* as a new elected activity in the second commitment period of the Kyoto Protocol.
SBSTA Invitation and IPCC Decision

• At its 33rd Session (December 2010 in Cancun), SBSTA invited the IPCC:

  To undertake further methodological work on wetlands, focusing on the rewetting and restoration of peatland, with a view to filling in the gaps in the 2006 IPCC Guidelines in these areas and to complete this work for the thirty-ninth session of the SBSTA.

• At its 33rd Session (May 2011 in Abu Dhabi), IPCC decided to produce the 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands (Wetlands Supplement)
Production of *Wetlands Supplement*
Milestones

IPCC Approves Outline

Governments, Organisations nominate experts

Bureau selects authors (CLA., LA and RE)

Authors draft first order draft, LA 1 & LA2

Authors Prepare Final Draft, LA4

Expert & Government Review

Authors prepare Second Order Draft, LA3

Expert Review

Final Distribution and Government Review

IPCC adopts Overview Chapter and accepts Report

Publication

IPCC adopts
Overview
Chapter and
accepts Report

Publication
Wetlands Supplement: Some Facts

- **68** Lead Authors and **15** Review Editors from **29** countries
- **22** Contributing Authors from **11** countries
- **7** Chapters and an Overview Chapter
- Over **1100** scientific publications cited
**Wetlands Supplement: Review Process**

- **Expert Review**
  - Over 270 individuals registered
  - 5053 comments from 128 Expert Reviewers on the First Order Draft (FOD)

- **Govt. & Expert Review**
  - Over 240 individuals registered
  - 3740 comments from 112 Expert Reviewers and 14 Governments on the Second Order Draft (SOD)

- **Final Govt. Distribution**
  - 347 comments from 14 Governments on the Final Draft (FD)
Contents of *Wetlands Supplement*
Structure

2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands

- Methodological Guidance on Lands with Wet and Drained Soils, and Constructed Wetlands for Wastewater Treatment

• Overview Chapter
• Glossary
• Chapter 1: Introduction
• Chapter 2: Drained Inland Organic Soils
• Chapter 3: Rewetted Organic Soils
• Chapter 4: Coastal Wetlands
• Chapter 5: Inland Wetland Mineral Soils
• Chapter 6: Constructed Wetlands for Wastewater Treatment
• Chapter 7: Cross-cutting Issues and Reporting
• List of CLAs, LAs, CAs, REs and reviewers
Chapter 1: Introduction

General guidance and information on the linkages between the 2006 Guidelines and the *Wetlands Supplement*

1) Start: Determine land-use category

2) Yes: Vol. 4, Chapters 5 and 11, 2006 IPCC Guidelines and Chapters 2 and 5, Wetlands Supplement

3) Is the soil organic and/or wet?
   - No: Vol. 4, 2006 IPCC Guidelines (To be read in conjunction with new guidance available in Chapters 4 and 5, Wetlands Supplement)
   - Yes: Vol. 4, Chapters 5 and 11, 2006 IPCC Guidelines and Chapters 2 and 5, Wetlands Supplement

5) No: Vol. 4, 2006 IPCC Guidelines (To be read in conjunction with new guidance available in Chapters 4 and 5, Wetlands Supplement)
Except for Chapter 4, the *Wetlands Supplement* only deals with non-CO₂ GHG fluxes and carbon stock changes in soils. For guidance on other pools, refer to the 2006 Guidelines.
Managed Land Proxy

• The *Wetlands Supplement* continues to use the “managed land proxy” (MLP) to estimate *anthropogenic* emissions & removals.
  – Anthropogenic emissions & removals are those that occur on managed land – where managed land is defined broadly as covering production, ecological, and social purposes.

• The *2006 IPCC Guidelines* restricted managed wetlands to those lands where the water table is artificially changed (e.g., drained or raised) or those created through human activity (e.g., damming a river).

• This *Wetlands Supplement* extends this coverage also to include wetlands constructed for wastewater treatment, or where emissions and removals from coastal wetlands are attributed to specified human activities.
Chapter 2: Drained Inland Organic Soils

- Provides updated guidance for managed inland organic soils including land drained for forestry, cropland, grassland, and settlements across climate zones.
  - updated emission factors
  - new guidance on Dissolved Organic Carbon and CH\(_4\) from ditches
  - new guidance on emissions from peat fires
Chapter 3: Rewetted Organic Soils

- Provides new guidance on GHG emissions from rewetted organic soils including boreal, temperate, and tropical wetlands occurring in any land-use category.
  - “Rewetting” is the deliberate action of raising the water table on drained soils to re-establish water saturated conditions, and can have several objectives, e.g. wetland restoration.
Chapter 4: Coastal Wetlands

- Provides new guidance for specified management activities in coastal areas of mangroves, tidal marshes and seagrass meadows.
Chapter 5: Inland Wetland Mineral Soils

- Provides new guidance for managed inland wetland mineral soils, including lands used for forestry, cropland, grassland, and settlements, and rewetted mineral soils.
  - Includes riparian wetlands, forested swamps and marshes in all climate zones.
Chapter 6: Constructed Wetlands for Wastewater Treatment

• Provides new guidance on wetlands constructed for wastewater treatment.
  – Supplements Volume 5 (Waste Sector) of the 2006 IPCC Guidelines, Chapter 6 on Wastewater Treatment
  – Covers wetlands that have been designed and constructed to use natural processes involving vegetation, soils, and associated microbial assemblages to treat wastewater.
  – New guidance is also provided on semi-natural treatment wetlands.
Chapter 7: Cross-cutting Issues and Reporting

• Provides overall guidance on how to report anthropogenic emissions and removals from wetlands in the framework of the 2006 IPCC Guidelines.

• Also gives general good practice guidance on cross-cutting issues:
  – Key category analysis
  – Uncertainty analysis
  – Times series consistency
  – Quality Assurance and Quality Control

• Supplements the guidance given in Volume 1 of the 2006 IPCC Guidelines.
Summary

• The *Wetlands Supplement* provides methodological guidance for estimating anthropogenic GHG emissions and removals from wetlands and drained soils.

• The scope of the *Wetlands Supplement* is broader than the coverage of “Wetlands” in the 2006 IPCC Guidelines.

• The Wetlands Supplement provides, among others:
  – Updated guidance on *inland drained organic soils*
  – New guidance on the *rewetting of organic soils* (including peatlands)
  – New guidance on *coastal wetlands*
    • including mangroves, tidal marshes and seagrass meadows
  – New guidance on *inland wetland mineral soils*
  – New guidance on *constructed wetlands for wastewater treatment*
Thank you!

Wetlands Supplement