



Evolution of the IPCC Guidelines in the Context of the UNFCCC Process

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IPCC TFI TSU

IPCC TFI Side event

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Outline

- GHG Inventories and climate actions
- The IPCC Guidelines for national greenhouse gas inventories
 - The *KP Supplement* and *Wetlands Supplement*
- The IPCC Guidelines and international climate actions under the UNFCCC
- Summary

GHG Inventories and Climate Actions

GHG emissions/removals occur from a variety of sources/sinks



What are GHG Inventories?

- Estimates of all emissions and removals of greenhouse gases (GHG) from given sources or sinks from a defined region in a specific period of time.
- In the context of IPCC Guidelines and UNFCCC, GHG inventories mean:
 - Greenhouse Gases
 - National Estimates
 - Annual Estimates

Why are GHG inventories important?

Scientific understanding

Policy formulation & implementation

Input to models

Understand link between environmental pollution and effects to sources of pollution

Identify the sectors, sources, and activities responsible for greenhouse gas emissions

To understand the emission and removal trends

To help develop cost-effective mitigation policy

To monitor progress towards policy goals

To inform the public

Why do we need GHG inventory guidelines?

- Any international agreement to limit climate change must set emission limits/targets/aims and monitor progress in an open and transparent way.
- Currently, most national emissions can only be estimated, not measured and so we need a consensus on the best way of doing this.
- To do this we need reliable, generally accepted and comparable methods and guidelines.

The basic idea in inventory estimation

$$E = EF \cdot AD$$

Emissions or removals from a human activity

Emission Factor
(emissions or removals per unit activity, e.g., mass of carbon dioxide emitted per unit of fuel consumed)

Activity Data (extent of human activity, e.g., fuel consumption)

The IPCC Guidelines for National Greenhouse Inventories

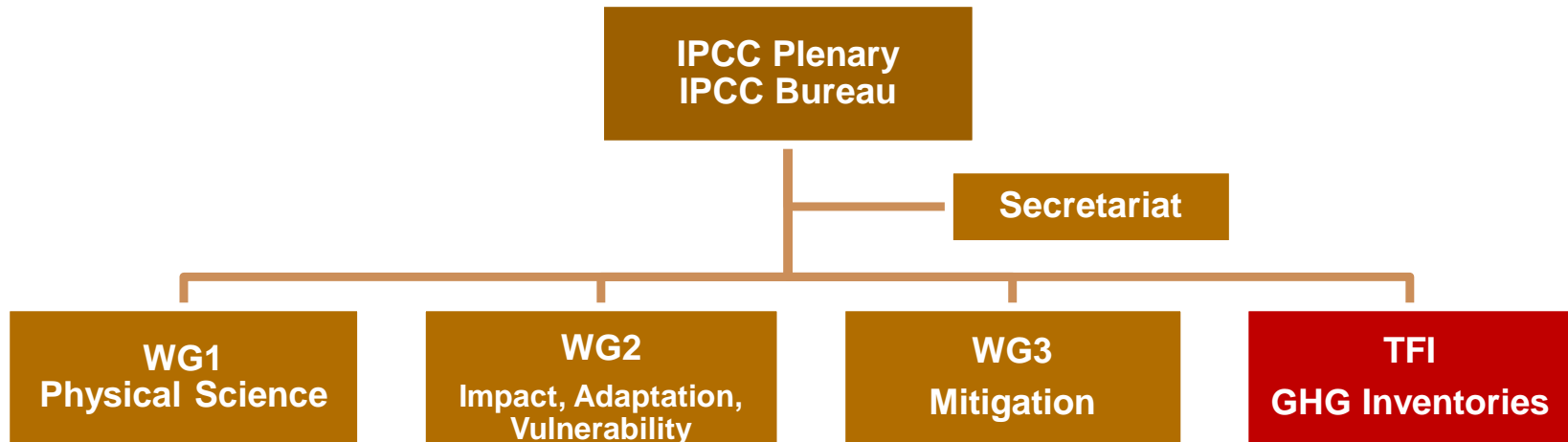
Establishment of TFI

The IPCC National Greenhouse Gas Inventories Programme was managed from 1991 by the IPCC WG I in collaboration with the Organisation for Economic Co-operation and Development (OECD) and the International Energy Agency (IEA) until the setting up of the TFI.

- 1995 *1995 IPCC Guidelines* were developed by the IPCC in collaboration with OECD & IEA.
- 1996 *Revised 1996 IPCC Guidelines* were developed by the IPCC in collaboration with OECD & IEA.
- 1997 Kyoto Protocol was adopted in UNFCCC COP3 held in Kyoto.
- 1998 **The IPCC14 decided to establish IPCC Task Force on National Greenhouse Gas Inventories (TFI).**
 - The need for continuous improvement of GHG emission estimation methodologies was recognized.
 - the Emission reduction commitments set in the Kyoto Protocol raised the importance of national GHG inventories.
 - Japan offered to host & support the TFI TSU..

1999 **TFI went into operation following the establishment of the TFI TSU.**

Establishment of TFI (2)



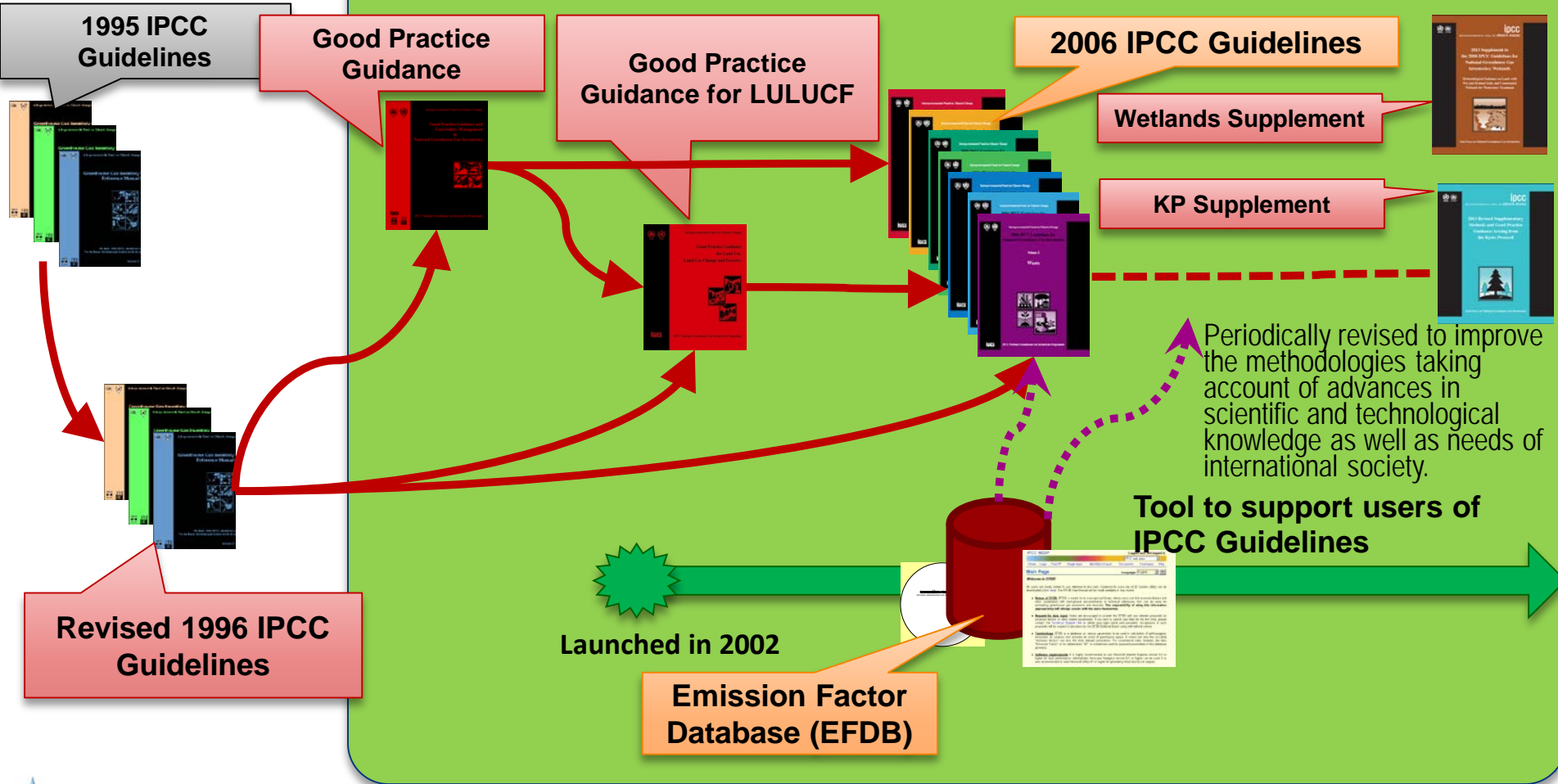
Objectives of TFI

- To develop and refine internationally-agreed methodologies and software for the estimation and reporting of national GHG emissions and removals; and
- To encourage the widespread use of these methodologies by countries participating in the IPCC and by Parties to the UNFCCC.
 - The TFI is responsible for assessing and developing inventory methods and practices which are scientifically sound and relevant to all countries, noting particularly the lack of information in developing countries.

Evolution of IPCC Guidelines & other tools

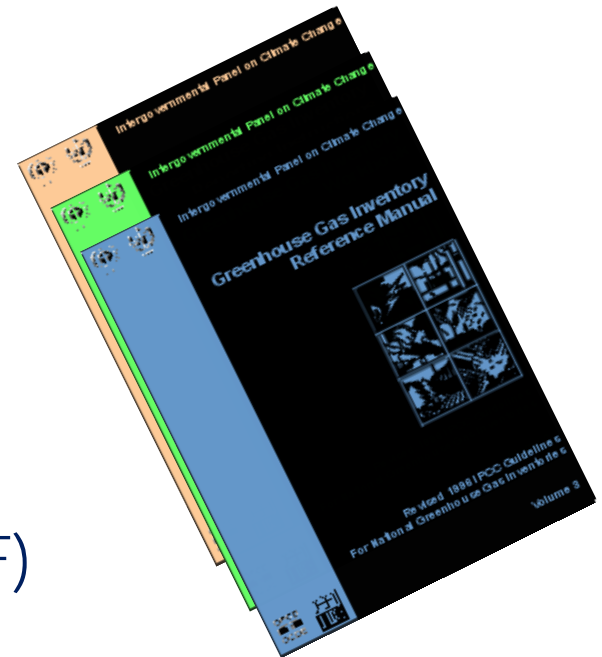
TFI TSU has been supported by Government of Japan since 1999.

1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013



The *Revised 1996 IPCC Guidelines*

- The earliest set of IPCC Guidelines still being used by the Parties to the UNFCCC
- Contain guidance on 6 sectors:
 - Energy
 - Industrial Processes
 - Solvent and Other Product Use
 - Agriculture
 - Land Use Change and Forestry (LUCF)
 - Waste
- LUCF sector addressed only the most important land-use activities resulting in emissions/removals.



GPG2000 & GPG-LULUCF



- Updated and complemented earlier guidelines while providing the concept of *good practice*
- *Good practice* Inventories are: "*those that contain neither over- nor under-estimates so far as can be judged, and in which uncertainties are reduced as far as is practical.*"
- *Good practice* inventories are *Transparent, Accurate, Complete, Consistent, Comparable*, and efficient in resource-use.
- *Managed land* is used in these guidelines as a proxy for identifying anthropogenic emissions by sources and removals by sinks.
 - Use of *managed land* as a proxy for anthropogenic effects was introduced in the *GPG-LULUCF* and is consistent with the *Revised 1996 IPCC Guidelines*.
- *GPG-LULUCF* Introduced comprehensive coverage of all land by dividing into 6 land-use categories.

2006 IPCC Guidelines



- Updated and expanded earlier guidelines while maintaining consistency
- Restructured main categories and sub-sectors to clarify and simplify inventories and to reduce chance of double-counting:
 - Agriculture + LULUCF → AFOLU
 - Industrial Processes + Solvent Use → IPPU
- Integrate *good practice* guidance for clarity and ease-of-use:
 - Require similar resources to implement as the 1996 IPCC Guidelines plus the two volumes of *GPG*
 - Does not pre-empt accounting choices - all the information needed is retained
- Include:
 - updated default values and methods
 - methods for additional categories and direct greenhouse gases
- The best globally applicable methods reflecting latest science

2006 IPCC Guidelines (2)



- 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

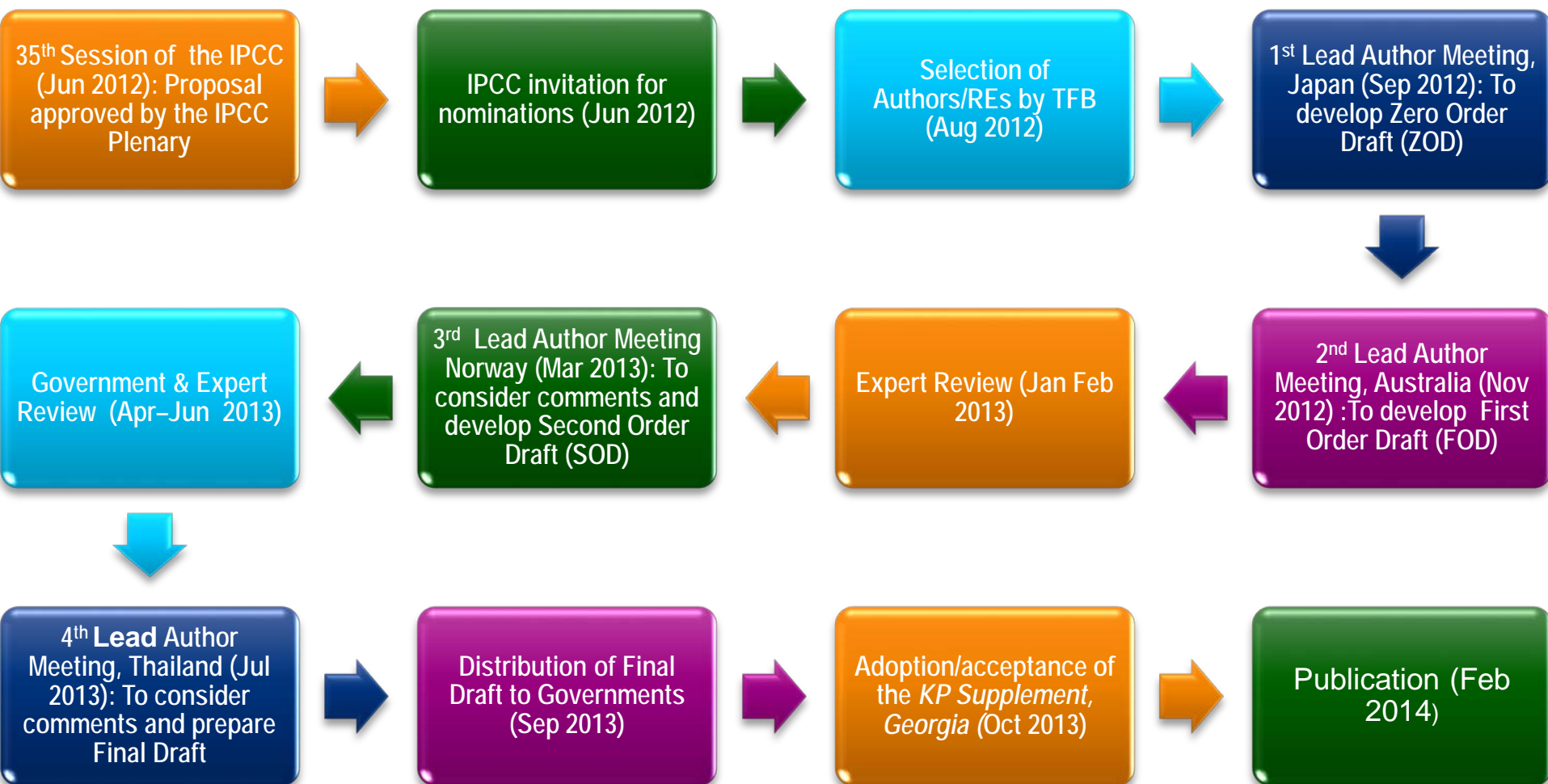
The *KP Supplement*

- The *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol (KP Supplement)* provides supplementary methods and *good practice* guidance for estimating and reporting anthropogenic greenhouse gas (GHG) emissions and removals resulting from LULUCF activities under Article 3.3 and Article 3.4 of the Kyoto Protocol for the second commitment period, 2013-2020.
- Supplementary methods are additional guidance to produce the supplementary information needed in greenhouse gas inventories to meet the LULUCF rules for the Kyoto Protocol.

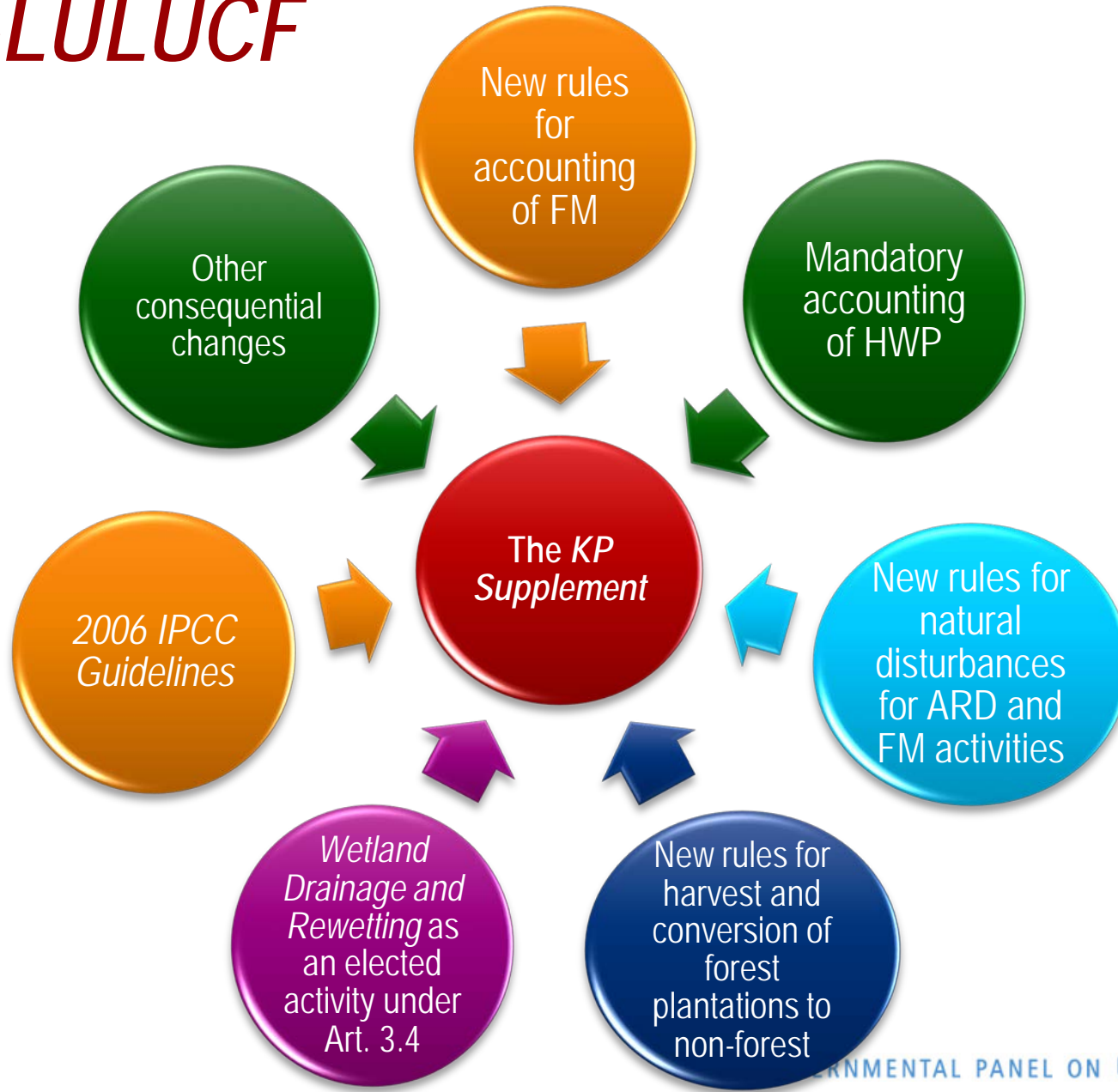
Background

- Chapter 4 of IPCC *GPG LULUCF* provides the supplementary methods and *good practice* guidance for reporting of LULUCF activities under Article 3.3 and 3.4 of the Kyoto Protocol for the first commitment period.
- The UNFCCC CMP7 invited the IPCC *"...to review and, if necessary, update supplementary methodologies for estimating anthropogenic greenhouse gas emissions by sources and removals by sinks resulting from land use, land-use change and forestry (LULUCF) activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol (KP), related to the annex to 2/CMP.7, on the basis of, inter alia, Chapter 4 of IPCC's 2003 Good Practice Guidance for Land-use, Land-use Change and Forestry."*

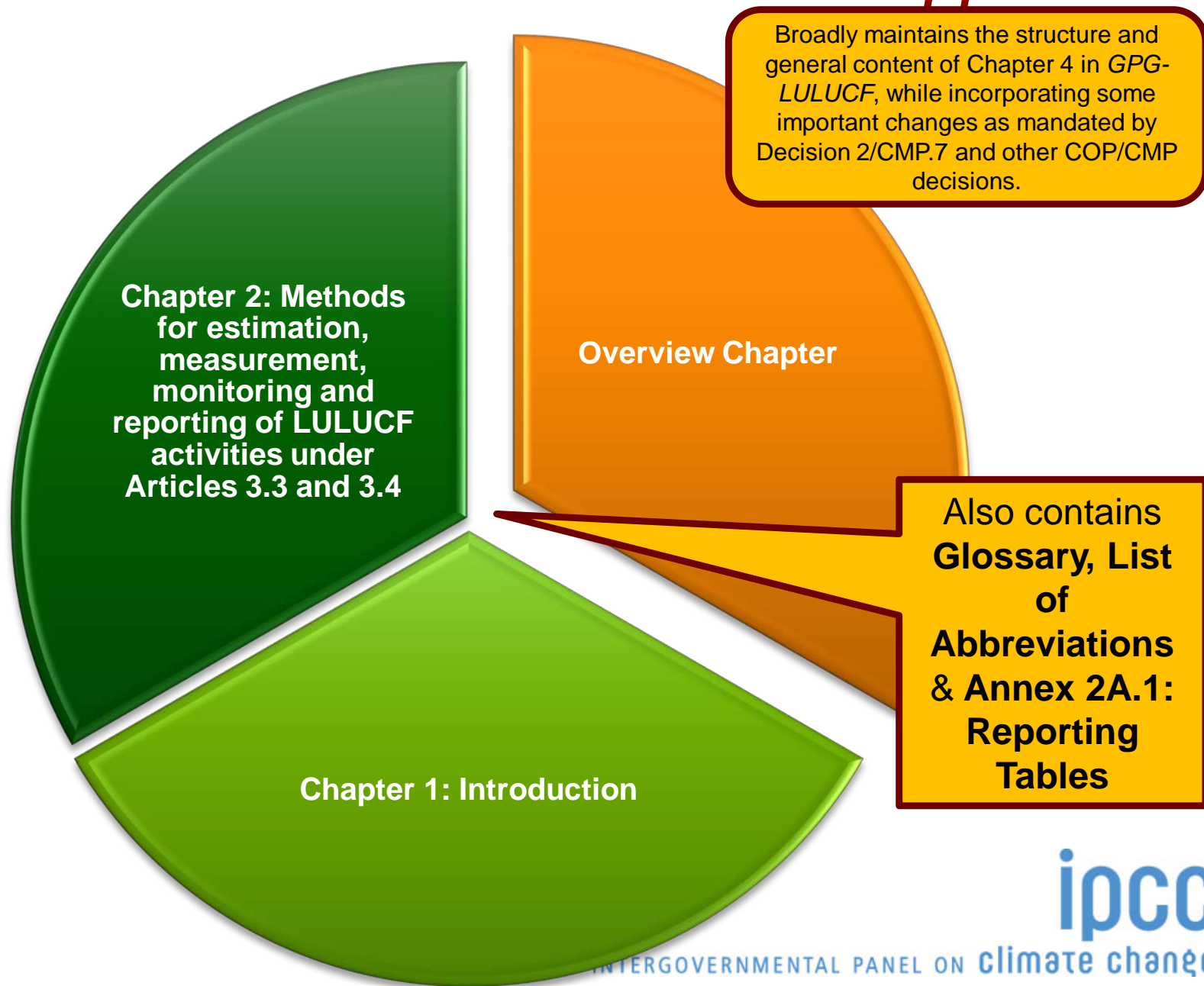
Production of the *KP Supplement*



Reasons for Revision of Chapter 4 of the *GPG-LULUCF*



The structure and content of the *KP Supplement*



The *Wetlands Supplement*

- The *2013 Supplement to the 2006 IPCC Guide-lines for National Greenhouse Gas Inventories: Wetlands (Wetlands Supplement)* extends the content of the *2006 IPCC Guidelines* by filling gaps in coverage and providing updated information reflecting scientific advances, including updating emission factors.
- It covers inland organic soils and wetlands on mineral soils, coastal wetlands including mangrove forests, tidal marshes and seagrass meadows and constructed wetlands for wastewater treatment.
- The coverage of the *2006 IPCC Guidelines* on wetlands was restricted to peatlands drained and managed for peat extraction, conversion to flooded lands, and limited guidance for drained organic soils.

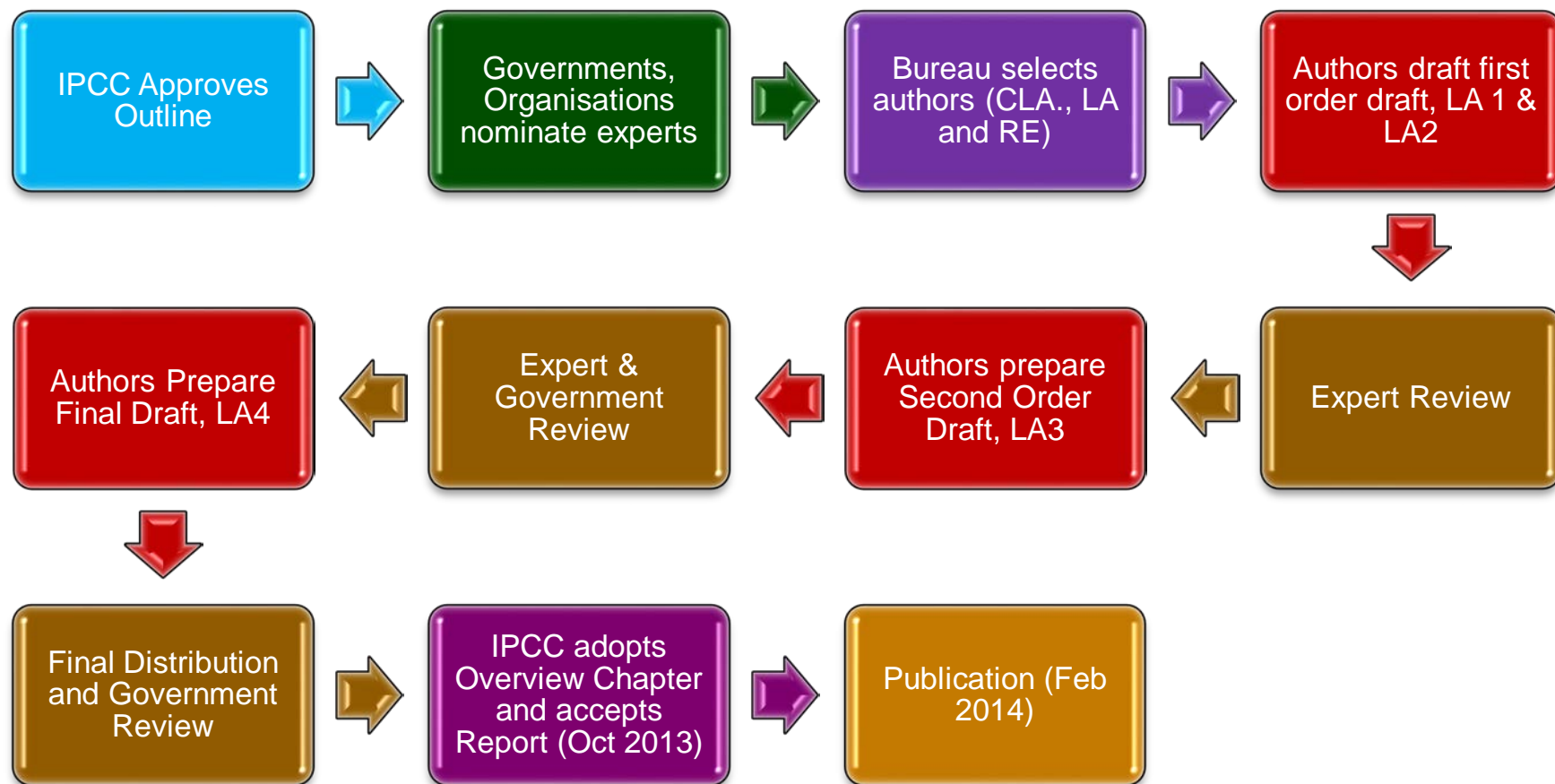
Background

- 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 the *Wetlands Supplement*



Structure of the *Wetlands Supplement*

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

IPCC Guidelines and International Climate Actions under the UNFCCC

UNFCCC and IPCC TFI (1)

- The Parties to the UNFCCC are required to use the IPCC Guidelines for preparation of GHG inventories.

UNFCCC

- 1992 UNFCCC was adopted.
- 1994 UNFCCC entered into force.
- 1995 COP1 (Berlin)

Decided that the IPCC Guidelines should be used by Parties.

- 1996 COP2 (Geneva)
Decided again that the IPCC Guidelines should be used by Parties.

- 1997 COP3 (京都)
Reaffirmed that Parties should use the Revised 1996 IPCC Guidelines.

IPCC

- 1991 IPCC/OECD/IEA Inventory Programme was launched.
- 1994 1995 IPCC Guidelines were produced.
- 1996 Revised 1996 IPCC Guidelines were produced.

UNFCCC and IPCC TFI (2)

UNFCCC

1998 SBSTA8 (Bonn)

Encouraged the IPCC to prepare a report on *good practice*.

2000 SBSTA12 (Bonn)

Decided that Annex I Parties shall use *GPG2000*.

2001 COP7 (Marrakesh)

Invited the IPCC to prepare a report on good practice for LULUCF.

2002 SBSTA17 (New Delhi)

Invited the IPCC to revise the *Revised 1996 IPCC Guidelines* by early 2006.

2003 COP9 (Milan)

Decided that Annex I Parties shall use *GPG-LULUCF*.

2005 COP/MOP1 (Montreal)

Decided that Annex I Parties shall use the *Revised 1996 Guidelines* and GPGs under KP.

IPCC-TFI

1999 Started work on *GPG2000*

2000 Produced *GPG2000*

2002 Started work on *GPG-LULUCF*

2003 Produced *GPG-LULUCF*

2004 Started work on *2006 IPCC Guidelines*

UNFCCC and IPCC TFI (3)

UNFCCC

2006 SBSTA24 (Bonn)

Welcomed the timely work of the IPCC in preparing the *2006 IPCC Guidelines*

2009 SBSTA30 (Bonn)

decided the use of *2006 IPCC Guidelines* from 2015 submission by Annex I Parties

2010 SBSTA31 (Cancun)

invited the IPCC to undertake further methodological work on wetlands to fill in the gaps in the *2006 IPCC Guidelines*

2011 COP/MOP7 (Durban)

invited the IPCC to review and update supplementary methodologies for estimating GHG emissions/removals from KP LULUCF activities during the 2nd commitment period

2013 SBSTA39 (Warsaw)

IPCC-TFI

2006 Produced the *2006 IPCC Guidelines*.

2011 Started work on the *Wetlands Supplement*

2012 Started work on the *KP Supplement*

2013 Completed the *Wetlands and KP Supplements*

UNFCCC and IPCC TFI (4)

Currently, all the Parties use these under the UNFCCC and the Kyoto Protocol.

Annex I Parties shall use **GPG**.
Non-Annex I Parties are encouraged to use **GPG**.

GPG2000 (non-LULUCF) **GPG2003** (LULUCF)



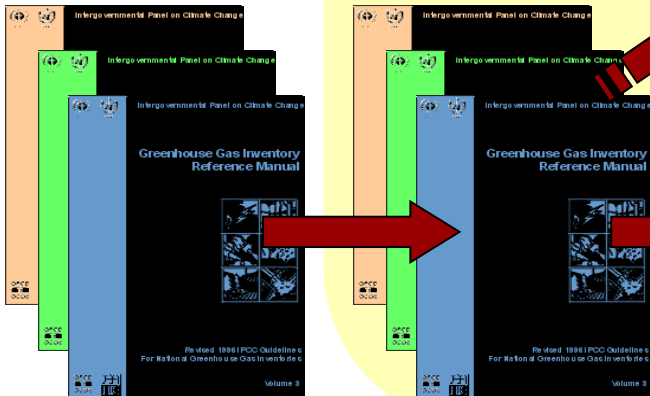
Annex I Parties must use from 2015

2006 IPCC Guidelines



1995 IPCC Guidelines

Revised 1996 IPCC Guidelines



Revision/Update by the IPCC

Summary

- GHG inventories have a variety of uses.
 - They help understand the magnitude of the problem and are a key to policy development as well as reporting and monitoring progress towards targets.
- The IPCC Guidelines provide robust, internationally acceptable and comparable methodologies for estimation and reporting national GHG emissions/removals.
 - Inventory management and *good practice* are important to ensure the quality and credibility of GHG inventory estimates.
- The IPCC Guidelines and other tools have been used by the Parties to UNFCCC to meet their inventory reporting requirements and to develop mitigation policies.
 - The IPCC guidelines have been successful in facilitating the development and implementation of past UNFCCC agreements by allowing the Parties to report and account for their emissions/removals in a rigorous, transparent and comparable way.



Thank you for your attention!!

www.ipcc-nggip.iges.or.jp

Wetlands Supplement: <http://www.ipcc-nggip.iges.or.jp/public/wetlands/index.html>

KP Supplement: <http://www.ipcc-nggip.iges.or.jp/public/kpsq/index.html>

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