# Greenhouse Gas Inventories - Scope and Purpose

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WMO UNEP

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# IPCC

- Established by WMO (World Meteorological Organization) and UNEP (United Nations Environment Programme) in 1988 to;
  - Make periodic assessments of the science, impacts and the socio-economic aspects of climate change and of adaptation and mitigation options to address it;
  - Assess, and develop as necessary, methodologies such as the IPCC Guidelines for National Greenhouse Gas Inventories;
  - Provide, on request, scientific/technical /socio-economic advice to the Conference of the Parties to the United nations Framework Convention on Climate Change (UNFCCC) and its bodies.

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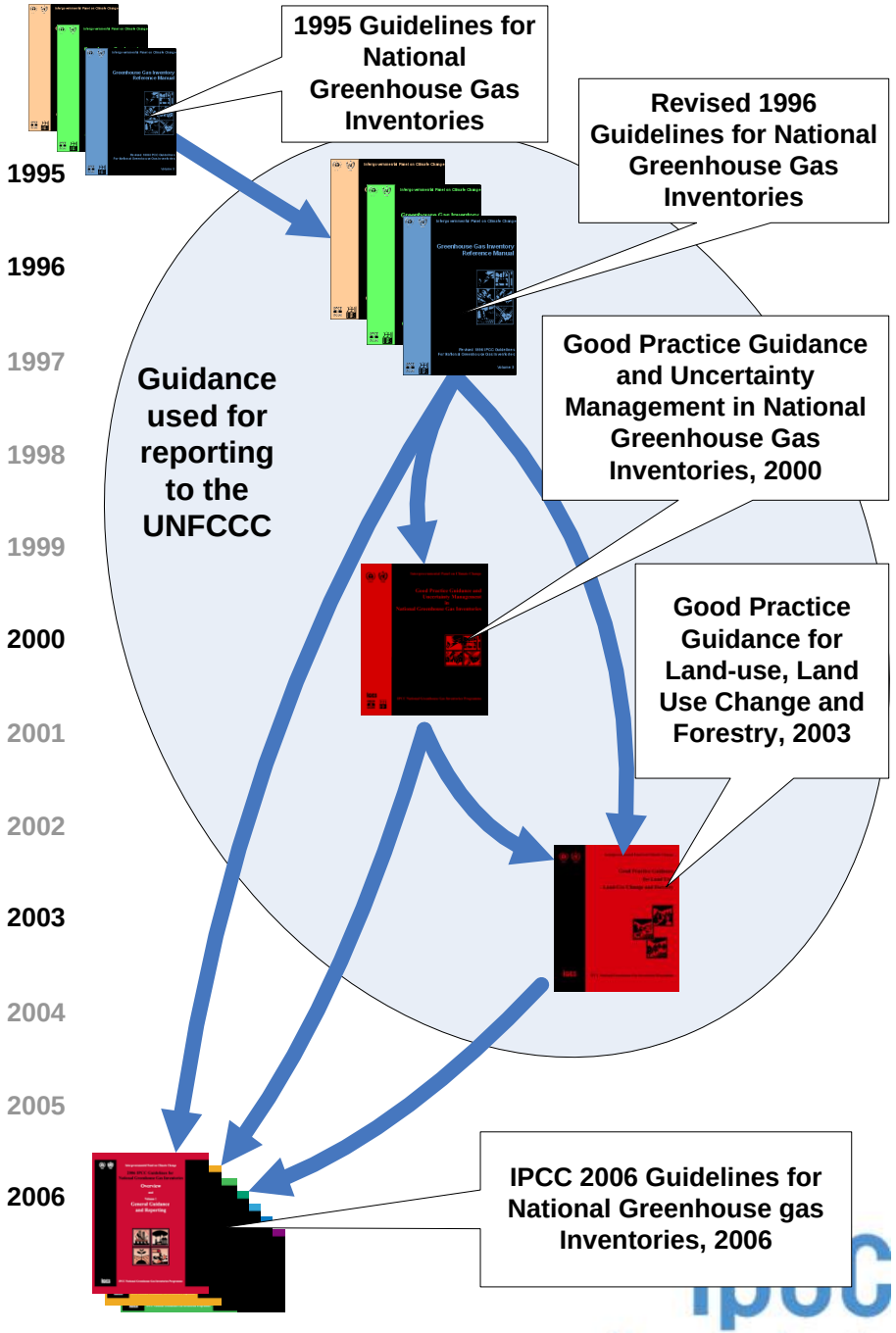
# UNFCCC Art. 4 Commitments

1. All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:

   (a) Develop, periodically update, publish and make available to the Conference of the Parties, in accordance with Article 12, national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of the Parties;

# History

- Revised 1996 Guidelines approach – Land-Use Change and Forestry (LUCF)
  - Identifies major likely land use sources
- 2000 Good Practice Guidance and Uncertainty Management
  - Defines GPG
- Good Practice Guidance for Land Use, Land-Use Change and Forestry (GPG LULUCF)
  - New approach – all lands and C pools
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories
  - Combines Agriculture and LULUCF into AFOLU

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# IPCC Guidelines & UNFCCC

- Annex I Parties “shall” use the Revised 1996 Guidelines and the Good Practice Guidelines (2000 and LULUCF)
- Non-annex I parties “should” use the Revised 1996 Guidelines and are “encouraged” to use the Good Practice Guidelines (2000 and LULUCF)
- The IPCC 2006 Guidelines are currently under consideration by the UNFCCC
  - However some non-annex I parties use them and some annex I parties use their methods.

# Emission Inventories

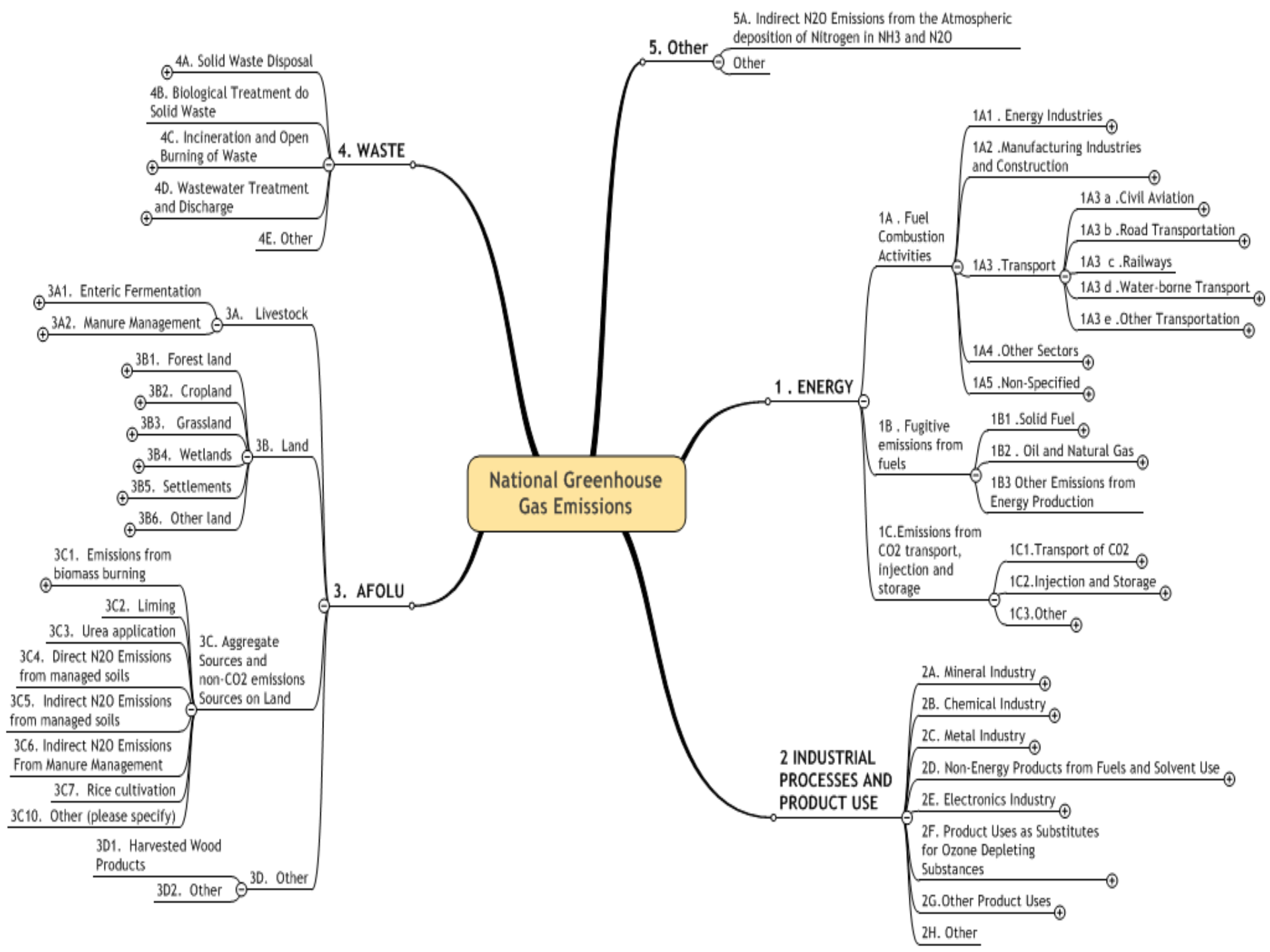
- Enable emissions to be understood:
  - Provide comparable data between countries
  - Give reliable time series
  - Explain link between emissions and activities
    - Mitigation
- Monitor emissions
  - Progress against targets can be monitored
- Should be transparent
  - Documented so other can understand
  - Reviews increase credibility and reliability

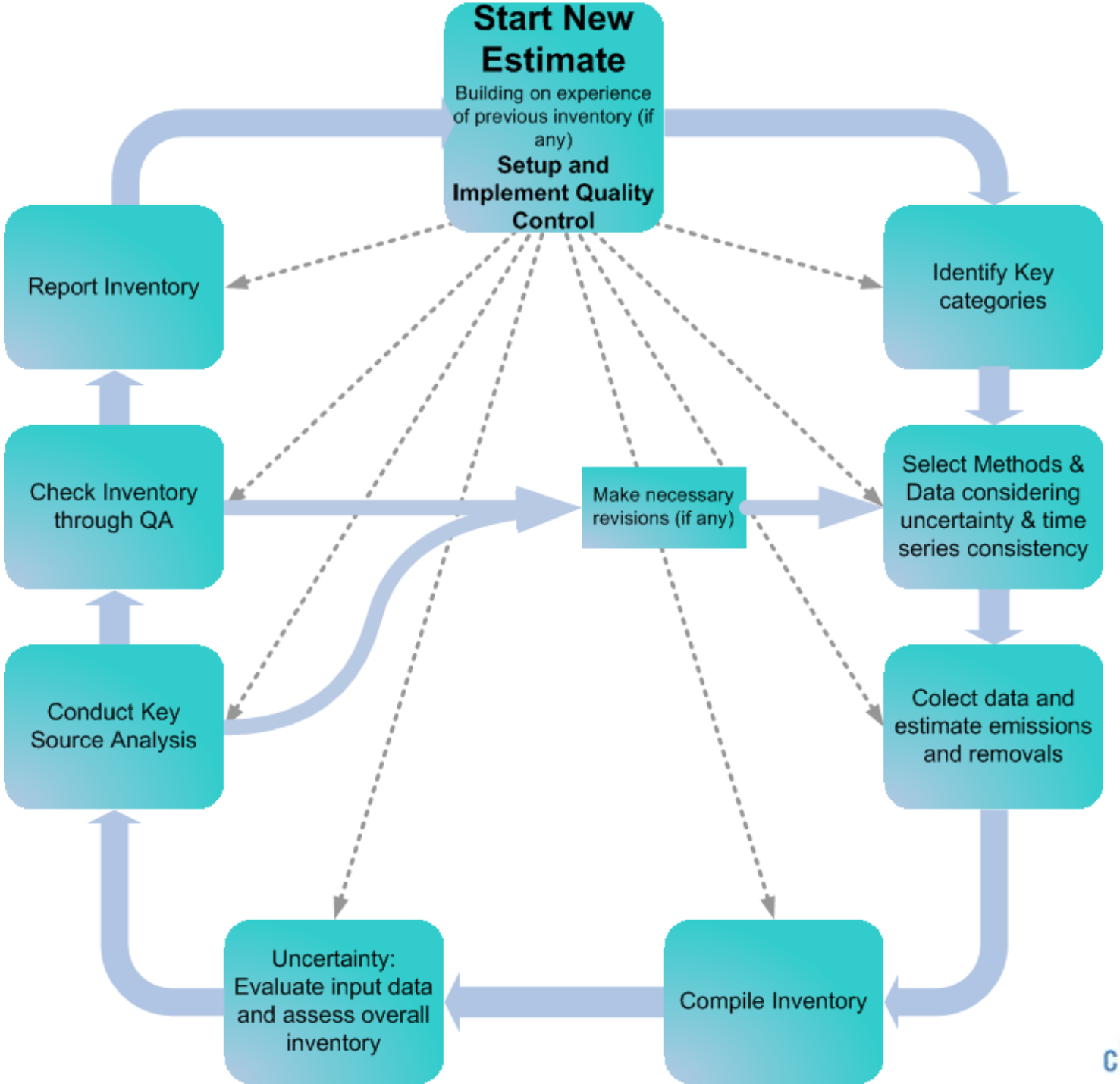
# Emission Inventory Guidelines

- Inventories should be:
  - Transparent – sufficient documentation, reporting
  - Consistent over time
  - Comparable between parties
  - Complete – cover all sources and sinks
  - Accurate – as practical give available resources
- Good Practice assists countries in producing inventories that are accurate in the sense of being neither over nor underestimates so far as can be judged, and in which uncertainties are reduced as far as possible

# IPCC Guidelines – Scope

- National
  - All anthropogenic emissions and removals from territory
- Annual
  - Net calendar-year emissions
- All gases covered by Kyoto Protocol & AR4
  - For Land Use and Land-Use Change: $CO_2$, $CH_4$ and $N_2O$
- Can be used for other purposes
  - BUT need to consider boundaries, tier used, leakage, displacement and other impacts


National Greenhouse Gas Emissions
1 . ENERGY
1A . Fuel Combustion Activities
1A1 . Energy Industries
1A2 .Manufacturing Industries and Construction
1A3 .Transport
1A3 a .Civil Aviation
1A3 b .Road Transportation
1A3 c .Railways
1A3 d .Water-borne Transport
1A3 e .Other Transportation
1A4 .Other Sectors
1A5 .Non-Specified
1B . Fugitive emissions from fuels
1B1 .Solid Fuel
1B2 . Oil and Natural Gas
1B3 Other Emissions from Energy Production
1C.Emissions from CO2 transport, injection and storage
1C1.Transport of CO2
1C2.Injection and Storage
1C3.Other
2 INDUSTRIAL PROCESSES AND PRODUCT USE
2A. Mineral Industry
2B. Chemical Industry
2C. Metal Industry
2D. Non-Energy Products from Fuels and Solvent Use
2E. Electronics Industry
2F. Product Uses as Substitutes for Ozone Depleting Substances
2G.Other Product Uses
2H. Other
3. AFOLU
3A. Livestock
3A1. Enteric Fermentation
3A2. Manure Management
3B. Land
3B1. Forest land
3B2. Cropland
3B3. Grassland
3B4. Wetlands
3B5. Settlements
3B6. Other land
3C. Aggregate Sources and non-CO2 emissions Sources on Land
3C1. Emissions from biomass burning
3C2. Liming
3C3. Urea application
3C4. Direct N2O Emissions from managed soils
3C5. Indirect N2O Emissions from managed soils
3C6. Indirect N2O Emissions From Manure Management
3C7. Rice cultivation
3C10. Other (please specify)
3D. Other
3D1. Harvested Wood Products
3D2. Other
4. WASTE
4A. Solid Waste Disposal
4B. Biological Treatment do Solid Waste
4C. Incineration and Open Burning of Waste
4D. Wastewater Treatment and Discharge
4E. Other
5. Other
5A. Indirect N2O Emissions from the Atmospheric deposition of Nitrogen in NH3 and N2O
Other

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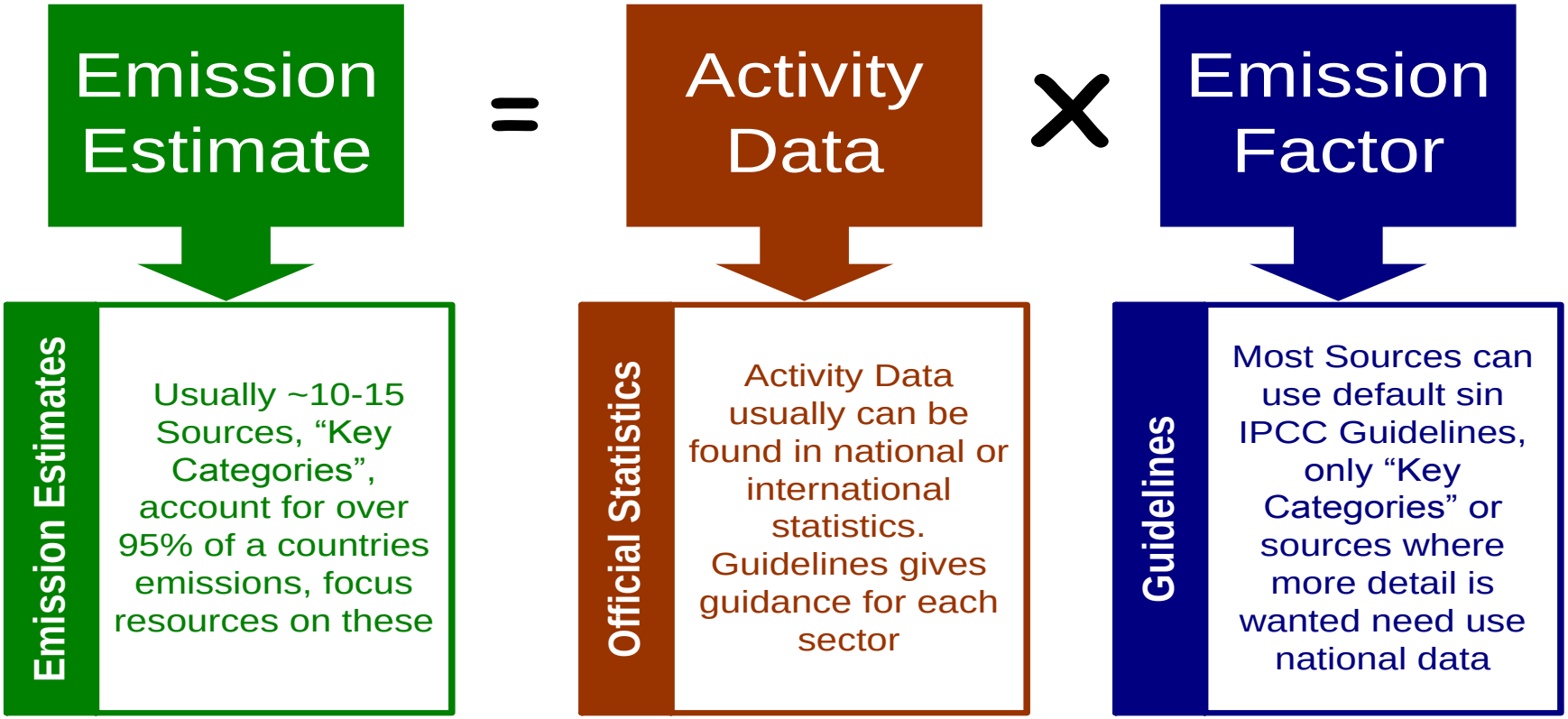
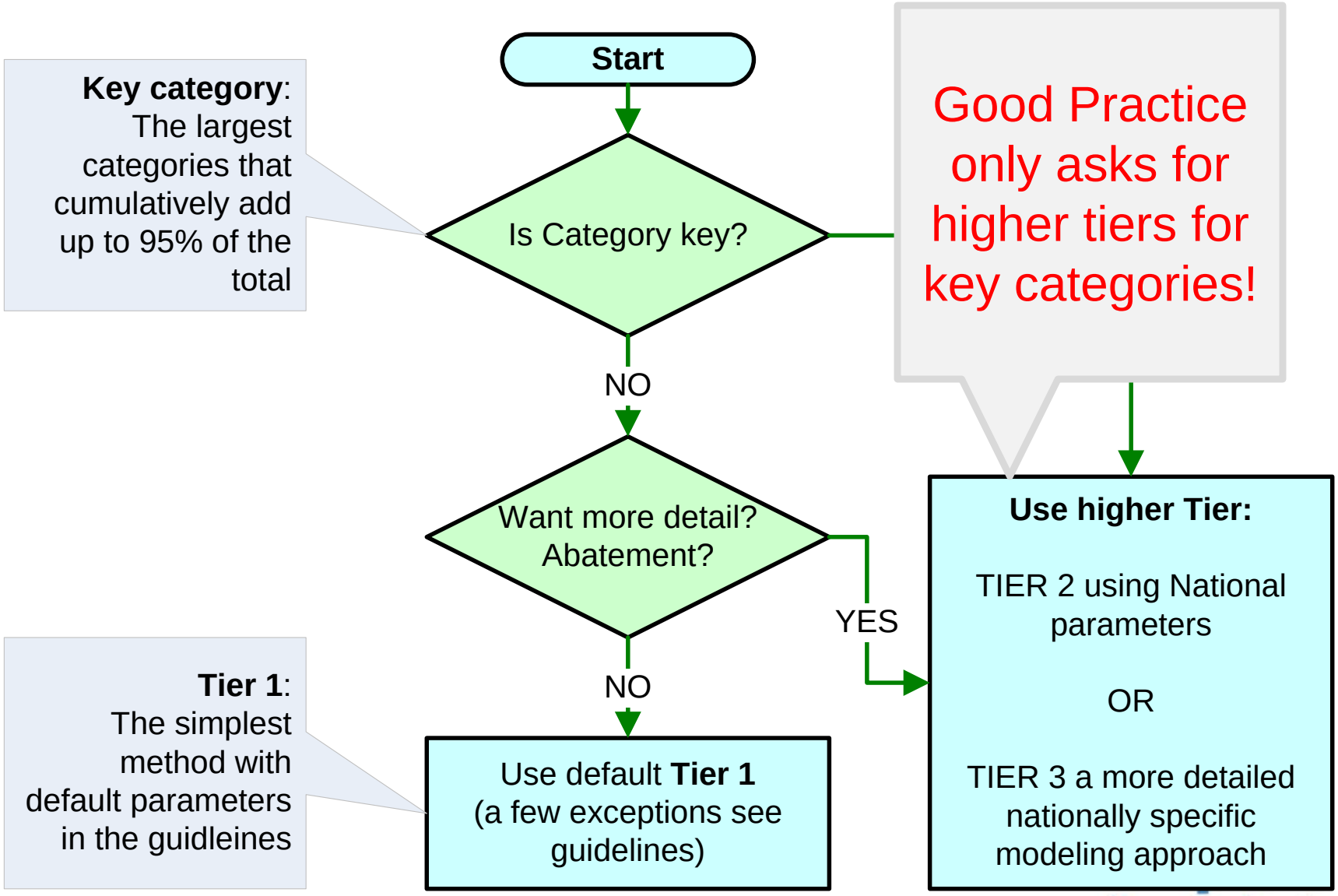
# Basic Method



# Tiers and Key Categories



# Summary

- IPCC Emission Inventory Guidance was produced and updated at the invitation of the UNFCCC
- IPCC Guidance is aimed at national, annual estimates
- IPCC Guidance is adopted by UNFCCC as it provides estimates that are:
  - Consistent between parties (annual and time series)
  - Transparent and understood
  - Takes account of resources and capacity
  - Provides common understanding
  - The best available default globally consistent methods
- Methods
  - take account of limited resources
  - Inventory development should be incremental from year to year – not a "one off" – part of a on-going process


# Thank you

## Guidelines in all UN languages can be downloaded from

## http://www.ipcc-nggip.iges.or.jp

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