



IPCC Inventory Developments

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Following the completion of the 2006 Guidelines

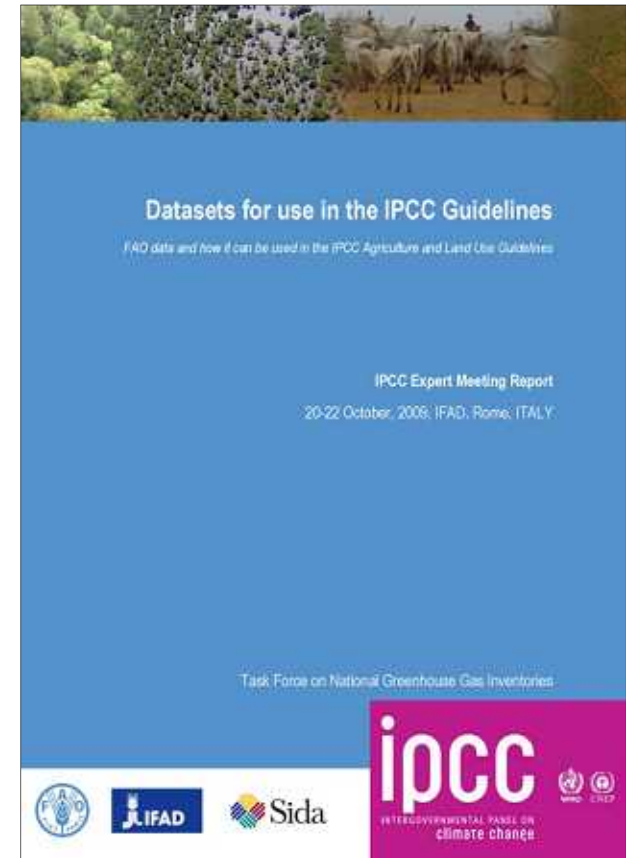


- The TFI has focused on providing assistance to users of all the IPCC Guidelines. This includes:
 - Holding expert meetings to explore problems and solutions
 - Developing the Emission Factor Database (EFDB) to maintain a library of up-to-date information for inventory compilers
 - Developing Software
 - Developing information on our web site
 - FAQ
 - Presentations

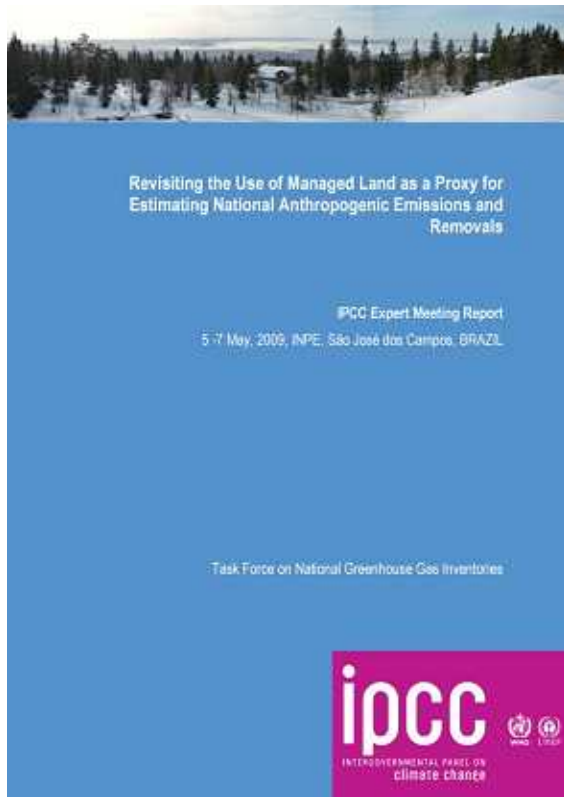
Datasets for use in the IPCC Guidelines:

FAO data and how it can be used in the IPCC Agriculture and Land Use - *2009, IFAD, Rome, ITALY*

- Many inventory compilers have noted the difficulty in obtaining suitable data for LULUCF and/or AFOLU
- Much of the data is available from the FAO but it is not clear to inventory compilers where this is held or how to use it
- While national data is preferable the FAO data provides a useful set of data especially for smaller categories
- The IPCC TFI held a meeting jointly with the FAO and IFAD to explore these issues
- The outcome was a report that lists the data items (largely activity data) needed to compile an inventory and where to find it on the FAO web site, or FAO contacts.



Revisiting the Use of Managed Land as a Proxy for Estimating National Anthropogenic Emissions and Removals - 2009, INPE, São José dos Campos, BRAZIL



- IPCC's advice in the 2006 Guidelines is that the anthropogenic component of emissions and removals from forestry and land use is the component which occurs on managed land. This is the managed land proxy and the meeting confirmed this advice.
- The experts considered a range of techniques (some of which could be the basis for Tier 1 approaches) for separating anthropogenic from non-anthropogenic fluxes.
- Before any of these methods can be widely endorsed further development is needed
- For these methods to be used the approach used and any estimates need to be fully described and transparently documented; applied in accordance with time series consistency; and follow good practice.



National Forest GHG Inventories – A Stock Taking -

February, 2010, Yokohama, Japan

- Meeting Identified Areas for Additional Guidance
 - Design of forest monitoring systems
 - inventory design, stratification (particularly in dynamic landscapes) , sampling, pools and accuracy/uncertainty assessment;
 - Combination of ground based inventories with remote sensing and modelling approaches;
 - Use of remote sensing data in forest GHG inventories
 - stratification, change assessment and use of remote sensing methods for biomass estimation;
 - Guidance on selectively logged forests.
 - Data on emission factors and parameters have improved since the 2006 Guidelines were finalised (EFDB) e.g. Biomass (Conversion and) Expansion Factors (BEF/BCEF), and emission factors for peat lands.

Areas where more assistance is needed

- A simple introductory guide to estimation of emission and removals in forests
- Use of GPG – additional decision trees and flow charts
- More advice on the implementation of Uncertainty Estimation Methods in AFOLU
- Use of “Tier 3” models
- Ways to ensure latest information is available
 - “Technical Bulletins” or Meeting Reports
 - EFDB
 - Discussion Forum
 - FAQ
- Existing guidance incomplete for Peatlands / Wetlands

Uncertainty and Validation of Emission Inventories –

March 2010, Utrecht, the Netherlands



- Uncertainty is an area where inventory compilers were having difficulties in following the IPCC Guidelines and GPG
- Since the 2006 IPCC Guidelines was produced the science of remote sensing and ambient measurements has developed
 - increasing potential applicability of these techniques to inventory validation/verification
- Current guidelines still reflect the state of the art but need to be supplemented by easy-to-use advice on how to approach uncertainties, and this can be written as Q&A
 - *A first set of Q&A was developed*
- Remote sensing, ambient measurement and inverse modelling techniques are currently not sufficiently developed to provide comprehensive verification at the required accuracy
 - *Identified a number of areas for possible prioritisation*

EFDB (<http://www.ipcc-nggip.iges.or.jp/EFDB/>)

- New approaches to collecting new data
 - TSU and EB adopting more pro-active role in collecting data
- Data meetings - data holders and EB members
 - identifying, selecting and approving data
 - to identify ways to populate the EFDB and to foster greater co- operation between the research community and the IPCC TFI in helping populate the EFDB.
- Three meetings have been successfully held:
 - 1st meeting on forestry, especially on biomass expansion factors (Buenos Aires, November 2008)
 - 2nd meeting on livestock emissions (Santiago, June 2009)
 - 3rd meeting on soil C in croplands and grasslands (Santiago, June 2009)

Software

- Software for the 1996 Guidelines and GPG LULUCF now maintained by UNFCCC
- We are developing software for the 2006 Guidelines
 - An incomplete demonstration version is available on our web site
 - We hope to shortly have a review version for the AFOLU sector available from our web site
 - We aim to have a complete version available by the end of 2010 with an expert meeting to consider the complete software in December 2010

- IPCC 2006 Categories
- 1 - Energy
 - 1.A - Fuel Combustion Activities
 - 1.A.1 - Energy Industries
 - 1.A.1.a - Main Activity El
 - 1.A.1.a.i - Electricity
 - 1.A.1.a.ii - Combined
 - 1.A.1.a.iii - Heat Plan
 - 1.A.1.b - Petroleum Refin
 - 1.A.1.c - Manufacture of
 - 1.A.1.c.i - Manufactur
 - 1.A.1.c.ii - Other Ener
 - 1.A.2 - Manufacturing Industr
 - 1.A.2.a - Iron and Steel
 - 1.A.2.b - Non-Ferrous Me
 - 1.A.2.c - Chemicals
 - 1.A.2.d - Pulp, Paper and
 - 1.A.2.e - Food Processin
 - 1.A.2.f - Non-Metallic Min
 - 1.A.2.g - Transport Equip
 - 1.A.2.h - Machinery
 - 1.A.2.i - Mining (excludin
 - 1.A.2.j - Wood and wood
 - 1.A.2.k - Construction
 - 1.A.2.l - Textile and Leat
 - 1.A.2.m - Non-specified I
 - 1.A.3 - Transport
 - 1.A.3.a - Civil Aviation
 - 1.A.3.a.i - Internation
 - 1.A.3.a.ii - Domestic
 - 1.A.3.b - Road Transport
 - 1.A.3.b.i - Cars
 - 1.A.3.b.i.1 - Pass

Fuel Combustion Activities

Worksheet:
 Sector: Energy
 Category: Fuel Combustion Activities
 Subcategory: 1.A.1.a.i - Electricity Generation
 Sheet: CO2, CH4 and N2O from fuel combustion by source categories - Tier 1

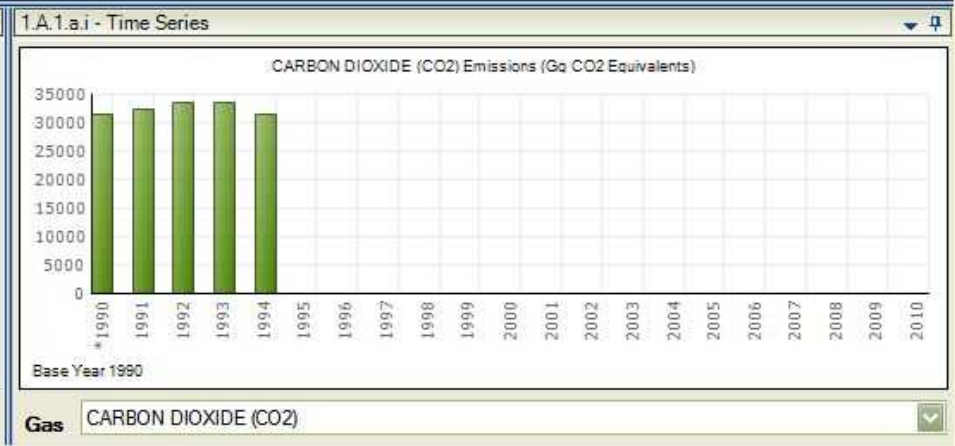
Data
 Fuel Type: Solid Fuels Conversion Factor Type: NCV GCV

Solid Fuels		Energy Consumption			CO2		CH4		N2O		Remark
Fuel	A. Consumption (Mass, Volume or Energy Unit)	B. Conversion Factor (TJ/Unit) (NCV)	C. Consumption (TJ) (C=A*B)	D. CO2 Emission Factor (kg CO2/TJ)	Z. Amount Captured (Gg CO2)	E. CO2 Emissions (Gg CO2) (E=C*D/10^6-Z)	F. CH4 Emission Factor (kg CH4/TJ)	G. CH4 Emissions (Gg CH4) (G=C*F/10^6)	H. N2O Emission Factor (kg N2O/TJ)	I. N2O Emissions (Gg N2O) (I=C*H/10^6)	
Anthracite	1000 Gg	26.7	2670	98300		2624	1	0.02	1.5	0.04	
Coking Coal	2000 Gg	28.2	5640	94600		5335	1	0.05	1.5	0.08	
Other Bitumi	3000 Gg	25.8	7740	94600		7322	1	0.07	1.5	0.11	
Sub-Bitumin	4000 Gg	18.9	7560	96100		7265	1	0.07	1.5	0.11	
Lignite	5000 Gg	11.9	5950	101000		6009	1	0.05	1.5	0.08	
Oil Shale / T	500 Gg	8.9	4450	107000		476		NE 0	1.5	0.00	
Brown Coal	600 Gg	20.7	1242	97500		1210	1	0.01	1.5	0.01	
*											

Grand Summary
 Notation Key: None
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Worksheet remarks

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Future Developments.

- More Expert Meetings on important topics
 - Aug 2010, Use of Models and Measurements in GHG Inventories. The use of Tier 3 approaches brings issues of validation, reports, documentation
 - TFB to decide on topics for next year
 - Depends on needs of UNFCCC (if any)
 - We welcome inputs from users on issues we can address
 - Efforts to promote exchange of ideas and practices
- EFDB, more effort to collect data, consideration of interface needs to be easier for land use categories
- Software, finalisation and distribution, training material etc.



Thank you

Any Questions?



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