Annex 3: Issues for Sectoral Workshops to Consider

Type of Challenge	**Good Practice Element**	**General Requirements**	**Inputs** (Before meeting)	**Sectoral Requirements**	**Outputs** (to be included in report)
Inventory Completeness	Include all sources, consistent with *1996 Revised Guidelines**	Define terms	1. Current IPCC guidance on use of terms 2. Possible secretariat review of use of terms 3. National input on current practice	Ensure consistency in use of terms at sectoral level	Sectoral guidance on use of terms
Methodological Approach	Use good practice methods for *important* sources	Develop framework for "good practice method" approach (should reflect varied national circumstances) Identify options for national determination of important sources	1. Proposals of frameworks from countries 2. Examples of prioritisation techniques	Specify meaning of good practice methods source by source	Guidance that customises framework to sources

	Use good practice in obtaining emission factors or model parameters	Define key elements of good practice (measurements, scaling etc.)	1. Background paper on key issues with respect to emission factors 2. National inputs -key issues -current factors -research program	Evaluate key issues at source level Review IPCC default emission factors	Develop sectoral guidance, on use/development of emission factors Include recommendations for emissions factors (regional/national/ Technology-based) and/or model parameters
	Use good practice in obtaining activity factor data	Define key elements of good practice	1. Background paper on key issues with respect to activity data 2. National inputs -current data sources -key issues (such as bias, informal sector, confidentiality	Evaluate key issues at source level	Develop sectoral guidance
Inventory Quality	System for QA/QC	Establish general requirements of a QA/QC system	1. Background document summarising relevant QA/QC systems (e.g. ISO9000, EIIP) 2. National inputs on current practice	Evaluate applicability of general procedures to individual sources (e.g. technical aspects, resource requirements)	Guidance on good practice in QA/QC at sector level Input to QA/QC workshop
	Transparency	Establish elements of transparency: -tiers -rationale for approach -reproducibility -documentation and references -explanation of changes in key factors and assumptions	1. Background document summarising possible elements (with case studies where possible) 2. National input on current practice	Evaluate applicability at source level (e.g. technical aspects, resource requirements)	Guidance on transparency at source level

	Domestic review process (peer and public review)	Describe as part of overall system	1. See above	Identify types of experts and scope of review	Guidance on domestic review
Uncertainty	Uncertainty Assessment	Develop framework for assessment of uncertainty (Group A)	1. Background document summarising key issues and data available 2. National input on current practice 3. Preliminary default factors included in source reports	Discuss Group A questions at sector/source level	Guidance on sectoral uncertainty analysis Feedback to Group A
Reporting Issues	Meet formal requirements	Standard tables and supplemental information	1. Compilation of current requirements and guidance 2. National input on current submissions	Discuss technical aspects of requirements and guidance	Recommendation for technical revisions Guidance on fulfilling formal requirements
Identification of Priority Areas (weaknesses)	Encourage continued advance in "state of the art"	General guidance Sensitivity analysis	1. Compilation of existing materials (e.g. Cuba, Bilthoven, national etc.) 2. National input on priority areas	Discuss priority areas	Recommendation of future work program

*All of these issues apply to all categories. Land-use change and Forestry is not explicitly addressed because it is the subject of another IPCC work programme.

Annex 4: Description of the Uncertainty Framework

Introduction

The UNFCCC is starting probably the largest environmental monitoring programme in the world. The uncertainty work must focus on key processes, it must consider internal and external uncertainties in inventories and how to treat them. There is a need to properly quantify uncertainties in order to prioritise environmental research to help provide more accurate emission estimates. The measures of uncertainty should over time chart the improvements made in the inventory methodology and data. Examples of this interactive activity are given in the country studies.

Uncertainty in greenhouse gas inventories is inevitable and stems from limitations to our knowledge about the processes which generate emissions and uptakes. Key limitations include:

- our knowledge about the variety of processes which generate emissions;
- the number of measurements available to develop models or algorithms for the calculation of emissions and uptakes,
- the resources we are able to assign to collecting statistical data necessary for the preparation of inventories, and
- the inherent variability of the systems being considered.

Uncertainty can be reduced through additional research and/or expanded measurement programs, but it cannot be completely eliminated. Therefore, we must decide how best to work with the data and resources available to us, taking full account of the need to accommodate the circumstances of all Parties.

The national case studies presented in Paris and the assessments by the UNFCCC secretariat suggest that the absolute uncertainty in national inventories in a given year may be 20% or more at the 95% confidence limit. They also suggest that the uncertainty in the trend, though less than this, is still likely to be comparable to the level of commitments.

Parties can manage uncertainty and minimise bias by following good practice guidance in compiling, assessing and reporting inventories using the IPCC yardsticks of consistency, comparability and transparency.

As greenhouse gas inventories continue to improve, so will the ability to model atmospheric concentrations and their trends. When these calculated emissions agree with observed concentrations, we will be able to effectively assess the impact of future and different emission controls on atmospheric concentrations of greenhouse gases.

Definitions and Constraints

An essential aspect of the development of an uncertainty framework for national greenhouse gas inventories is the development of an agreed set of definitions of the technical terms used. Definitions can be drawn from the statistical literature, but in most cases these definitions are broader than the meanings used in the context of inventory uncertainties, and in some cases multiple meanings exist in the statistical literature. Therefore one task of the uncertainty sub-group is to develop a glossary of key terms incorporating both the relevant accepted statistical definition and the specific meaning of