

# Flooded land BOG 4

**Q.1:** Do the issues need to be addressed in a new Methodology Report to supplement the 2006 IPCC Guidelines? **Yes**

- 6 fold increase in peer reviewed research publications
- 3 fold increase in number of reservoirs studied
- Improved geographic coverage of studies, covering boreal, temperate, tropics
- Synthesis efforts have lead to improved understanding of drivers
- Estimated at 5% of global anthropogenic methane emissions
- Technological advances have improved emission estimates
- Flooded land definition
- Net emissions approach consideration (cross cutting issue)

**Q.2:** What kind of refinements are recommended and what are available sources of data/information?

- New guidance. Existing 2006 GL Appendices to be considered
- Refer excel spreadsheet for detail

|                       | Types of flooded lands                                           |
|-----------------------|------------------------------------------------------------------|
| Important to consider | Reservoir (including draw-down lands)                            |
|                       | Run-of-the-river dams                                            |
|                       | Small dams/farm ponds                                            |
|                       | Aquaculture ponds                                                |
| Should be considered  | Ditches/canal networks                                           |
|                       | Flooded wetlands isolated from tidal flows<br>(could be pasture) |
|                       | Ring tanks/pumped storage reservoir?/subset<br>of reservoir?     |
| Not to consider       | "Natural" reservoirs (e.g. Lakes)                                |

| Pathways for Methane and CO <sub>2</sub> emissions |
|----------------------------------------------------|
| Diffusive emissions                                |
| Ebullition (bubbles)                               |
| Turbine degassing                                  |
| Downstream degassing (after the dam)               |
| Rooted emergent vegetation/macrophytes             |
| Emissions from draw-down land                      |

| Modifiers                                   |
|---------------------------------------------|
| Eutrophication (characterization of runoff) |
| Age of reservoir                            |
| Latitude/temperature                        |
| Catchment size                              |
| Soil type (carbon characteristics)          |
| Reservoir morphology                        |
| Phytoplankton growth                        |
| Sedimentation                               |
| C delivery from the catchment               |
| Photomineralization                         |
| Vegetation/macrophytes                      |

# Emerging issues to be considered at scoping meeting or by authors

- Net emissions approach versus managed land proxy
- Definition of flooded land to include run of the river dams
- Several key emission pathways can be addressed at Tier 1 level
- Some emission pathways will require higher tier approach in countries where they are important

## Cross cutting issues

- Consistency/overlap with some categories in the Wetland Supplement
- Avoidance of double counting/not accounting for carbon and nitrogen exported from terrestrial ecosystems and processed within flooded lands