



# Summary of Agricultural Mitigation Potential

**- UNFCCC document -**

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# Topics in UNFCCC

- Mitigation potential in the agricultural sector are taken up in AWG-LCA of UNFCCC.
- Technical paper for “*Challenges and opportunities for mitigation in the agricultural sector*” was released in 21 Nov. 2008. (See “FCCC/TP/2008/8”)
- Workshop was held during the 5<sup>th</sup> session of the AWG-LCA in 4 Apr 2009.
  - UNFCCC, IPCC, FAO and 9 countries presented



# Summary of UNFCCC Technical Paper



- Overviews **mitigation practices** in the agricultural sector, and **identifies policies and measures (PAMs)**
- Addresses **mitigation potential, methodological & technical challenges, possible barriers for their implementation**
- Identifies **win-win options, best practices and co-benefit & synergies**
- Identifies **knowledge gaps and research & development needs for future work**
- Provides **background information** on emissions, trends and projections in livestock, and crops and soils
- Consideration of the regional and national circumstances for the feasibility and applicability of mitigation practices



# Emissions and Trends

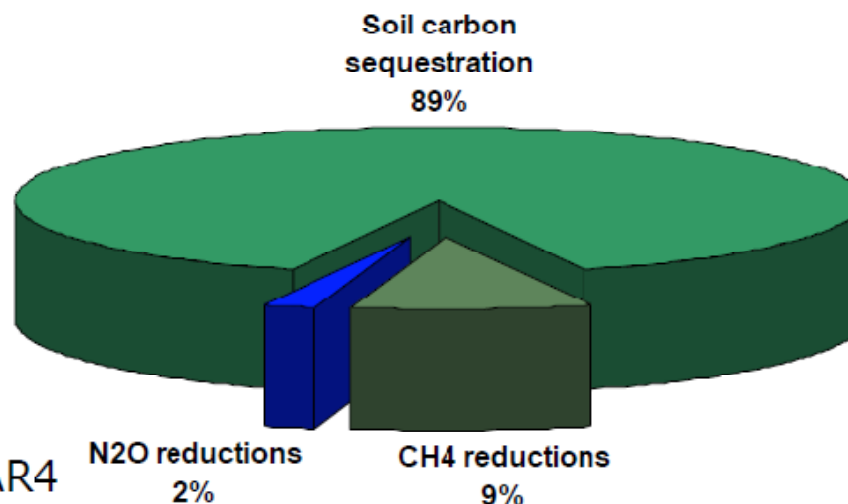
- 10-12% of the total global anthropogenic GHG emissions or about 6.8 Gt of CO<sub>2</sub> eq per year from agricultural sector (including soil C).
  - 17% increase from 1990 to 2005, and 74% of total is from developing countries.
  - Projected to increase further in the coming decades.
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- Figure 1. Trends for global non-CO2 emission, by source
  - Figure 2. Regional trends for non-CO2



# Mitigation Potential

- **High technical mitigation potential (5.5-6 GtCO<sub>2</sub> eq. per year by 2030)**
- **Soil carbon sequestration**; cropland and grazing land management, restoration of organic soils and degraded lands, bioenergy and water management
- **CH<sub>4</sub> reductions**; rice, livestock and manure management
- **N<sub>2</sub>O reductions**; soils (mainly crop management)

*Note: sectors in AR4 are not the same as IPCC GLs sectors*



Source: IPCC AR4

# Key Challenges and Opportunities

## Key Challenges

- Limit or maximum capacity of soil to store C
- Risk of losing C stored
- Difficulties in establishing a baseline
- High level of uncertainty in emissions estimates
  - lack of information

## Opportunities

- Alleviating poverty
- Sustainable development
- Food security
- Energy security
- Improvement of environmental quality



# Information for Asian Countries

- **Non-CO<sub>2</sub> emissions were highest** in **South and Southeast Asia** and Latin America and Caribbean regions (see Fig.2).
- CH<sub>4</sub> emissions from **rice cultivation have a high mitigation potential** in **China, South and Southeast Asia** by low cost (see Table 3).
- Cropland emissions (N<sub>2</sub>O and soil C) have a little emission reduction potential in Asia (see Table 2).
- In **South and Southeast Asia**, where **energy-related emissions are highest**, biodiesel and electricity generation from renewable energy sources offer meaningful mitigation opportunities.
- **Large livestock population** (Cattle, Swine, Sheep, Goat and Poultry) in Asia region (Fig.10 and Table 5).



# Details for Mitigation Practices

- **Mitigation practices, gaps and future needs**, and relevant information are collected up in the Annex at the end of the *Technical Paper*.

## Annex II~V

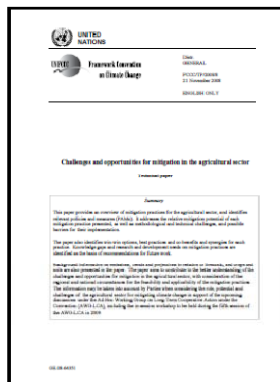
- Table 28 **Current** mitigation practices in **Livestock**
- Table 29 **Future** mitigation practices (**Livestock**)
- Table 30 **Current** mitigation practices in **Crop & Soil**
- Table 31 **Future** mitigation practices (**Crop & Soil**)





# Information on Documents and Webcasts

Greenhouse gas Inventory Office of Japan



*Technical Paper*

**Technical Paper, FCCC/TP/2008/8:**  
*“Challenges and opportunities for mitigation in the agricultural sector”*, released in 21 Nov 2008  
<http://unfccc.int/resource/docs/2008/tp/08.pdf#search='FCCC/TP/2008/8'>



*Webcast for Workshop*

**Workshop** ; the 5<sup>th</sup> session of the AWG-LCA in 4 Apr 2009.

[http://unfccc.int/meetings/ad\\_hoc\\_working\\_groups/lca/items/4815.php](http://unfccc.int/meetings/ad_hoc_working_groups/lca/items/4815.php)

**Webcast (04 Apr 09, AWG-LCA 5 Workshop)**

[http://unfccc.meta-fusion.com/kongresse/090329\\_AWG\\_Bonn/templ/ovw\\_page.php?id\\_kongressmain=67](http://unfccc.meta-fusion.com/kongresse/090329_AWG_Bonn/templ/ovw_page.php?id_kongressmain=67)

