



GHG emissions and mitigation potentials in the agriculture, forestry and fisheries sectors

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Climate change mitigation in agriculture and land use is a new challenge to the global community as part of the larger effort to limit global warming within acceptable limits.

A better knowledge base on greenhouse gas emissions from different production systems and land management practices is needed to maximise mitigation efficiency.



FAO's activities on mitigation in agriculture

- Through its multidisciplinary expertise in agriculture (which for the FAO includes forestry and fisheries), FAO aims to facilitate an integrated approach to mainstream climate change adaptation and mitigation into agriculture practices and agriculture related policies
- FAO is actively engaged in a number of initiatives and projects that promote GHG mitigation practices and techniques to underpin the knowledge base.



FAO is a founding Partner and hosting Agency of the Global Bioenergy Partnership (GBEP)

- FAO contributed to the production of the “**GBEP Common Methodological Framework for GHG Lifecycle Analysis of Bioenergy- Version Zero**”
 - “checklist” framework intended to provide a reference of pertinent questions for countries and institutions to compare the various existing methodologies dedicated to assessing GHG emissions of bioenergy systems in a transparent way
- FAO is Social Sub-Group leader within the GBEP Task Force on Sustainability, which is developing **sustainability criteria and indicators** for bioenergy production and use (these include GHG emissions, land-use change and food security)



Expert Consultation on GHG emissions and mitigation potentials in the agriculture, forestry and fisheries sectors

Approach:

- Evaluate the current status of data available on GHG emissions and mitigation potential and evaluate what is required to ensure consistent data generation and analysis, which is needed for policy, decision making, monitoring, international reporting and the development of low-carbon agriculture, forestry, and fisheries.
- Review the need for a global assessment framework and knowledge platform for emissions and mitigation potentials, as well as assessing the utility of policy relevant comparative approaches like life cycle assessments. The objective is to reduce the high levels of uncertainties and variations in the current estimates of emissions and mitigation approaches and to gather data in a way that more readily facilitates identification and implementation of good practices.



Framework for Assessment of GHG Emissions and Mitigation Potentials in the Agriculture, Forestry and Fisheries Sectors

- Large knowledge gaps and variations in the data for emissions and mitigation potential in the sectors
- Aims to build a framework to provide accurate figures for for policy and development purposes especially at the national and sub-national level
- Expert consultation held in Rome on 2 – 4th December 2009
 - Review the state of knowledge
 - Propose a framework
 - Propose a process



Terrestrial assessment

Recommendations from expert consultation:

- Global scope with focus on the national level
- Provide information organized by sector/system and by products
- Emphasis on accuracy and uncertainty estimates
- Structure of estimates from ecosystem, major land use category, land use sub-category to production system, **including land management practices and processing technologies.**
- Assessment of carbon stocks in addition to changes in carbon stocks
- Assessment of risks of non-permanence in carbon sequestration



Life cycle assessment

Recommendations from expert consultation:

- Develop guidance on the application of LCA-type tools for different policy purposes
- Develop an improved system for accounting for the implicit land-use greenhouse gas costs of food/fibre/energy production
- Develop detailed technical guidance for potential NAMAs
- Develop data base resources needed for LCA-type work
- A system for identifying gaps in data quality and application

Next steps

- Partnerships
- Information sharing
- Immediate deliverables (what, who)
- Mandate (eg UNFCCC, FAO)
- Next meeting – timing and focus



FAO climate change mitigation programme

The multi-donor programme aims to promote sustainable low-emission agriculture in developing countries over the coming five years, in partnership with countries and other relevant organizations.

The programme will create a global database on current and projected GHG emissions in land and agriculture for the most important agricultural commodities, countries and regions. There are currently no data on GHG emissions from individual agricultural commodities by country or by region available.

The programme will also assess various financing and crediting arrangements to incentivize adoption of agricultural practices that reduce/remove emissions and to enhance agricultural productivity. FAO will support the development of carbon measuring, reporting and verifying methodologies. An important element will be to involve farmers in mitigation actions and build capacity at national, regional and local level to realise the mitigation potential.



FAO, GBEP and the path to sustainable, low-carbon agriculture and bioenergy

- Bioenergy is leading the way in the application of LCA for greenhouse gas emissions and in particular analysis of emission GHG consequences of land-use change
- Use and development of the GBEP Common Methodological Framework for GHG LCA for Bioenergy and the FAO's new project on GHG emissions and mitigation potentials in the agriculture, forestry and fisheries sectors should:
 - generate useful information to guide the development of policy tools for promoting low-carbon agriculture and bioenergy and choices of land management practice and processing technologies
 - also provide basis for essential capacity building in understanding of mitigation options in agriculture, including identification of those that also represent solutions for adaptation