



Anchoring Agriculture within a Copenhagen Agreement

A Policy brief for UNFCCC parties by FAO

Agriculture has potential for crucial early action on mitigation

Agriculture is a major source of greenhouse gases (GHG), contributing 14% of global emissions¹. When combined with related land use changes, including deforestation (for which agriculture is a major driver), this share becomes more than one-third of total GHG emissions. Between 1990 and 2005 agricultural emissions in developing countries increased by 32% and are expected to continue to increase. Reducing and removing emissions from the sector, while ensuring food security and enabling economic growth will need to form part of an urgent global effort to achieve the ultimate objective of the UN Framework Convention on Climate Change (UNFCCC), contained in Article 2. Technical mitigation potential for the sector is high and 74% of this potential is in developing countries. The IPCC and global financial indicators highlight that the magnitude of the challenges to stabilize GHG concentrations will require utilizing Agriculture, Forestry and Other Land Use (AFOLU) related emission reductions to the fullest sustainable extent possible, until new technologies are affordable. Action is feasible and inaction is not an option. **Therefore the question to be asked may NOT be, whether agriculture should be included in a Copenhagen outcome document, but rather whether it makes sense to exclude it.**

This policy brief seeks to inform negotiators where agriculture is situated in the current negotiations and provides some proposals on how it might be addressed in a global climate change agreement. It builds on the more technical and comprehensive FAO submission made to the Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA), prior to its fourth session (FAO, *Enabling agriculture to contribute to climate change mitigation*, 6 February 2009²).

Agriculture offers Nationally Appropriate Mitigation Action (NAMA) for developing countries

NAMAs constitute an important entry point through which developing countries could contribute to global mitigation efforts in nationally appropriate ways. For many developing countries, agriculture constitutes a highly climate-sensitive sector, often the main sector of their economy, with considerable technical and economic potential to mitigate emissions. In many cases, agricultural mitigation practices have co-benefits that improve agricultural productivity and resilience and thus contribute to food security, sustainable development and adaptation. For these reasons, mitigation from the agriculture sector is highly relevant to the development of NAMAs in developing countries. Inclusion of agriculture in developing country NAMAs may also help to balance the exclusion of most forms of agricultural mitigation from the Clean Development Mechanism of the Kyoto Protocol.

At the same time, within the context of the development of NAMAs, there may be opportunities to explore innovative financing mechanisms with broader, more flexible approaches, multiple funding streams and innovative payment/incentive/delivery schemes to reach rural producers, including smallholders. Some forms of mitigation from agriculture, with high upfront investment and transaction costs or risks may not be initially financially attractive

1 See AWG-LCA Report on the workshop on opportunities and challenges for mitigation in the agricultural sector on 4 April 2009 (<http://unfccc.int/resource/docs/2009/awglca5/eng/crp02.pdf>)

2 <http://unfccc.int/resource/docs/2008/smsn/igo/036.pdf>

for the international compliance markets but public funding could be justified assuming activities significantly increase crop production and reduce climate change vulnerability. Moreover, differing national capacities and circumstances would seem to indicate that phased approaches may be needed to enable transitioning towards low emission sustainable development pathways. An initial phase might focus on building confidence, capabilities and national strategies, during which capacity building, technical assistance and financial incentives would be supported by public funds, possibly from a Multidonor Trust Fund using proceeds from auctioning allowances. Eventually emission reductions (ERs) generated from pilot projects could be purchased. Such ERs would not be used for compliance, but rather to gain experience and indicate to farmers that environmental services can be financially rewarded. An intermediate phase might begin implementation of strategies, up-scaling projects and, where nationally appropriate, sectoral mitigation approaches using public funding and simple methodologies (e.g. tier 1). Countries, which have or acquire capacity and knowledge could transition to progressively greater quantification of emissions reductions, utilization of incentives from market mechanisms and more robust Monitoring, Reporting and Verification (MRV) methodologies with ex-ante safeguards to ensure social and environmental integrity. This in turn might open the door to a NAMA carbon trading mechanism for emission reductions/removals in order to leverage private sector investment and innovation capacity, as well as to the eventual development of national cap and trade systems in developing countries, where deemed to be nationally appropriate.

Tailoring to country circumstances and capabilities

Nationally appropriate mitigation action in the agriculture sector will vary across countries and will need to be in tune with country circumstances and capacities. For example, mitigation actions with high co-benefits for food security, poverty reduction and enhanced resilience of agricultural production systems will be important in areas where agricultural productivity has been stagnating, particularly where a large share of the population or economy depends upon it.

Agriculture is under pressure to produce more to meet increased food demands associated with a growing population, giving rise to pressures for land conversion to agriculture and land degradation that generate increased emissions. These could be avoided by adopting sustainable agricultural and land management practices that reduce or remove emissions. However substantial public investment in capacity building, institutional development, extension and farm financing is required for farmers to make this transition. In this situation, agricultural-based NAMAs could provide an important stimulus to making changes that generate not only mitigation, but also development benefits.

In **East Africa** agricultural productivity remains at a relatively low level, i.e. about 1t maize/ha for the last 15 years. Improved nutrient management, increasing organic and synthetic fertilizer use (current levels of 6kgN/ha are far too low) and restoring degraded land will not only increase agricultural productivity, but will also reduce deforestation pressures and may sequester about 147 MtCO₂/year at a assumed carbon price of 0-20 US\$/tCO₂e, according to IPCC.

Agricultural NAMAs could also play an important role in reducing agricultural emissions and environmental pollution in more capital intensive production systems, while also facilitating adaptation to climate change. Often in this context there are agricultural and environmental policy instruments already in place to promote more sustainable forms of production and mitigation. However, technology, MRV systems and institutional capacity to manage multiple objectives and complex programmes are often lacking.

In **Asia**, improvement in fertilizer use efficiency is a key agricultural development issue, contributing to reductions in farm costs as well as increases in productivity. At the same time reducing emissions of nitrous oxide and nitrate water pollution can also be achieved. Making the needed changes will require education and incentivizing extension workers and farmers to adopt more targeted use of inputs and conservation agriculture.

Agricultural mitigation policies in industrialized agricultural production systems could contribute to a more consistent national and global GHG accounting system and cross compliance with environmental policies. The recent EU Review of existing information on the interrelations between soil and climate change highlighted that EU policies on renewable energy (biofuels and biomass) are not necessarily a guarantee for appropriate agricultural carbon management³.

Monitoring, Reporting and Verification (MRV) requirements – part of a step-wise approach

Developing agricultural MRV approaches would need to consider purpose, costs and country specific capacity. Countries will require, as mentioned above, different transition periods to adopt accurate MRV systems for monitoring emission reductions and removals. Financial assistance, capacity building and technology transfer is required for developing countries to develop MRV systems for agricultural mitigation activities. Higher accuracy is expected for offsetting through market based approaches. Low adoption and disappointing experiences with LULUCF-related accounting methodologies underlines that a step-wise approach with agreed increasing accuracy thresholds might be best suited to enable learning by doing approaches and to encourage urgently required “early mitigation actions”.

Synergies among financing for mitigation, adaptation, and ODA

Most countries will face both mitigation and adaptation challenges. It is important to assign high priority to mitigation actions that have strong adaptation benefits, for example most agricultural land mitigation activities. Lower priority could be assigned to mitigation activities that have no adaptation benefits. Financing preferences should generally go to the former, but a “top-up” based on the “adaptation asset” value could be considered. MRV systems to quantify the adaptation asset value, based on mutually agreed accounting units would need to be developed. Combined mitigation and adaptation activities are expected to reduce substantially transaction costs.

Funding for climate change actions in developing countries should be additional and clearly separate from current ODA. However, synergies and the potential to leverage effectiveness, by combining the two sources of funding, could be considered.

Anchoring agriculture in a climate change regime: three proposals

As countries embark on their first reading of negotiating texts at this session, they will have before them a number of options for their consideration. The following three proposals are made in the context of these options to help anchor agriculture in an eventual climate change regime, to be decided in Copenhagen. The aim is to enable the sector to fulfill its mitigation potential, deliver its unique co-benefits for food security, sustainable agricultural development and climate change adaptation, as well as contribute to the success of REDD mitigation activities.

1. Include Agriculture in the NAMAs of developing countries

- Many agricultural management practices and certain types of agricultural land use can be priority candidates for inclusion in NAMAs due to their multiple benefits for mitigation, sustainable development, environmental services and synergies with adaptation.
- Realizing these benefits, requires enabling adoption of these practices and land uses by farmers through capacity building and technology/financial transfers that must be designed to respond to the specificities of agriculture (which share certain similarities with REDD).
- Paragraph 73(d) of the AWG-LCA Negotiating Text (FCCC/AWGLCA/2009/8) states that NAMAs may include “*REDD-plus activities and other mitigation actions implemented in different areas and sectors, including agriculture.*” While national circumstances will dictate the content of NAMAs, the importance of agriculture to the economies of many developing countries, most Least Developed Countries and to the livelihoods of 70% of the poor in developing countries makes it a key determinant for success in responding to climate change in the context of sustainable development across much of the developing world.

3 http://ec.europa.eu/environment/soil/review_en.htm.

2. Ensure Financing for Agricultural Mitigation

Two main steps would seem necessary:

- **(i) Expand the scope of the Clean Development Mechanism (CDM)** so that the potential sequestration of soil and above ground carbon in agriculture (89% of the technical potential of mitigation from agriculture) can be tapped. AFOLU activities could include: reducing emissions from deforestation and forest degradation (REDD); sustainable forest management; restoration of wetlands; sustainable cropland and grassland management and other sustainable land use. Temporary/long-term certified emission reductions (ICER and tCER) units for land use credits (Afforestation/Reforestation) are not accepted on the market for various reasons. A fully fungible unit could be created by adopting a buffer approach to ensure permanence. The implications of different types of caps and incentives to reduce per-unit-product emissions require further research across different land uses and regions. FAO has begun some initial work on the livestock sector in this regard. (See *various options contained in Annexes 1 and 2 of document FCCC/KP/AWG/2009/8*)
- **(ii) Establish new financing mechanisms with broader, more flexible approaches**, integrating different funding sources and innovative payment/incentive/delivery schemes to reach producers, including smallholders. A phased approach using aggregating modalities for greater cost-effectiveness, front-loaded payments guaranteed by insurance or performance bonds, simplified rules and recognition of community/individual, formal/informal property rights are some design elements that would seem to hold promise in this regard.
- Paragraph 134 of the AWG-LCA Negotiating Text (FCCC/AWGLCA/2009/8), in the section entitled Cooperative Sectoral Approaches and Sector-specific Actions refers to agriculture and states *"Parties shall cooperate in R&D of mitigation technologies for the agriculture sector, recognizing the necessity for international cooperative action to enhance and provide incentives for mitigation of GHG emissions from agriculture, in particular developing countries. Consideration should be given to the role of soils in carbon sequestration, including through the use of biochar and enhancing carbon sinks in drylands."* The importance of R&D and incentives for agricultural mitigation is fully supported but may need to be appropriately reflected in sections of the negotiating text devoted to mitigation and financing.

3. Move towards a Comprehensive Landscape Approach

Transitioning to a comprehensive approach to all land uses could enable better management of synergies, trade-offs and leakage involved in mitigation of GHGs from land-based sources and sinks. Recent submissions, including those from Norway, the United States and Papua New Guinea, move in this direction. The linkages between agriculture and REDD suggest that neglect of agriculture in a global climate regime could have adverse outcomes for REDD mitigation.

- Terrestrial carbon baselines, under such an approach, might include: (i) all terrestrial carbon pools (soil and biomass, above and below ground for related GHGs) or (ii) all terrestrial carbon pools, but possibly with separate accounts for different land use systems, e.g. those that may be regulated under a national REDD baseline.
- Other issues of importance relate to the need, over time, for a rigorous land-use GHG accounting system. Such a system would be needed in order to account for leakage related to land use mitigation activities, bioenergy and trade; and to ensure cross compliance among agricultural and environmental policies. Also important will be the definition of a transition period, defined on a country by country basis, to provide a planning horizon for national agencies to build capacity and management systems, as well as research to address knowledge gaps. Depending on country circumstances, technology transfer and financial assistance will be needed, and incentives for early adopters could be considered.