

Agriculture and Copenhagen: priorities and possibilities



1. The key Kyoto questions:

A 50% global cut in GHG emissions is needed by 2050; earlier action is better than later. The main questions are:

- **Developed country cuts:** How much are industrialised countries willing to reduce their emissions of greenhouse gases?
- **Developing country limits:** How much are major developing countries such as China and India willing to do to limit the growth of their emissions?
- **Financing of developing country support:** How is the help needed by developing countries to engage in reducing their emissions and adapting to the impacts of climate change going to be financed?
- **Management of money:** How is that money going to be managed?

2. Main agricultural challenges

- 10-12% (or up to 14%) global emissions from agriculture – projected 36-63% growth by 2030
- Another 6-17% from agriculturally induced land use change – trends here?
- Three quarters of emissions come from developing countries. Four fifths of the world's population lives in the developing world.
- A growing world population – 9 bn by 2050
- Doubling of demand for food by 2050
- A shift towards more livestock intensive diets – doubling by 2050
- The number of people hungry worldwide has grown both absolutely and relatively
- Land use pressures: need to grow more food on less land
- Impact of climate change on agriculture – water shortages (30% less water availability by 2050), changes in suitability of which crops to grow, spread of disease, loss of agricultural land to the sea etc.
- Depleted fish stocks – marine sources also in danger – impact on demand for land based foods?
- Longstanding lack of investment in agriculture in developing world
- Biofuels

3. The potential for agricultural mitigation

IPCC 2007 estimates that in theory mitigation could offset all of today's direct agricultural emissions (5-6 gigatonnes CO₂e – excluding land use change). This is the technical potential – the economic potential is lower.

It estimates that 89% of mitigation potential will come from soil carbon and says that there can be win-wins for productivity too. Much lower potential for work on methane and nitrous oxide. IPCC doesn't say a lot about trade offs between carbon sequestration and N₂O.

IPCC projections are unclear about mitigation potential in the future as percentage of overall agricultural emissions. Mitigation potential will be constrained by:

- Increasing demand for food and effects on land use
- Time limitations of carbon sequestration - by 2030 the potential for sequestration will be more limited (equilibrium reached).
- Relative importance of methane and nitrous oxide set to grow if livestock grow as anticipated.

4. Priorities for action on agriculture

Physical

- Halt land use change: no more deforestation or degradation
- Build carbon stocks: agroforestry, no/min till, improved pastures, halting erosion, biochar
- Mitigate other gases: reducing N₂O from soils and methane from rice and livestock, reducing energy use
- Combine adaptation with mitigation

Socio-economic needs and challenges

- Research: into impacts of climate change and mitigation options – ie research to support adaptation with mitigation
- Money: Investment in education, agricultural outreach, support, infrastructure (North-South transfer). Policies to enable the flow of carbon finance from private and public sectors. Incentives for good practice
- Reach: making sure money, incentives and capacity building reaches and involves smallholders, and mitigation/adaptation delivers win-wins for rural development
- Capacity building
- Complex land tenure arrangements – need to develop an agreed system of property rights to the carbon benefits that can be generated.
- Numbers: Very dispersed sector – millions of farmers worldwide, farming in very diverse ways. Need to develop ways of measuring reporting and verifying (MRV) effects of mitigation measures (plus research and investment to support that). Satellite imagery to measure deforestation; soil analysis techniques to measure carbon and nitrogen balance
- Aggregation: Develop / use institutions that can facilitate the aggregation of carbon crediting amongst a large number of smallholders,

TG note: We need to be looking also to shift the trajectory of demand. Not just cutting demand in the developed world but altering the trajectory of demand in the developing world - this is not mentioned at all in the negotiating text or considered by the likes of IFPRI, the World Agroforestry Centre, Global Donor Platform on Rural Development or any of the other food/agriculture Copenhagen observers.

5. The Copenhagen process

To what extent will agriculture be discussed? It's in the AWG KP and LCA negotiating texts but all sorts of uncertainties. Millions of variants and it could get watered down considerably.

Until recently, land-related mitigation often seen the context of forestry – REDD and REDD + (not just reduced emissions from avoided deforestation but also degradation, sustainable forest management and conservation). Agriculture's only been seen in terms of adaptation.

This is changing.

Current inclusion of agriculture in the AWF-LCA negotiating text is summarised as follows:

- Agriculture-related terms are included 72 times in the current document;
- Three key areas include: recognises importance of food security and sustainable agriculture within a changing climate, touches on bringing agriculture into REDD-plus and calls for more R&D on agricultural mitigation technologies;
- There is no reference to smallholder agriculture, rural development or livestock; where mentioned, or groups;
- Adaptation is increasingly associated/merged with risk reduction and management. In this framework, insurance is included as a key tool and mentioned in relation to crop production;
- REDD plus references vary in whether they include agriculture
- A key reference to agriculture is found in the context of sectoral approaches/sector-specific activities;
- The link between land use sector and Nationally Appropriate Mitigation Actions (NAMAs) is currently not well developed;
- The need for effective measurement, reporting and verification (MRV) for both NAMAs and REDD-plus is emphasized.

Source for analysis: Platform Issue Paper No 5, Global Donor Platform for Rural Development, August 2009

Two things may realistically be achieved at the Copenhagen talks:

- One is to ensure that the agriculture references in the texts are agreed and included in the final drafts
- The other is to get a mandate for a work programme on agriculture

Advocates for including agriculture in post Copenhagen: FAO, IFPRI, World Agroforestry Centre, CGIAR group in general, Global Donor Platform for Rural Development, Terrestrial Carbon Group

6. Possible mechanisms suggested by observers for achieving goals and their challenges

The CDM: incorporating carbon sequestration (and other agricultural mitigation) activities into the CDM (eg. shifting to no till; moving to perennials; moving from crops to pasture). May create some odd bedfellows. Many practical and moral objections to the CDM and generally with market mechanisms including other carbon offsetting schemes.

Some of the challenges:

- Problems for agriculture of permanence, leakage and additionality (many CDM projects have same problems)
- CDM process very unwieldy and hard for small farmers – lack of capacity in most developing countries makes it hard to incorporate
- Will smallholders benefit or will the CDM be hijacked by the big players...? CDM could benefit large American prairie farmers at expense of African pastoralists
- Very limited role for agriculture in current manifestation of CDM;

- Aggregation: How to create a mechanism for aggregating individual small sequestrations by various farmers for accreditation – and then ensure that benefits actually go back down and reach those farmers

REDD +: Incorporation of agriculture/wider land sector into REDD + (Reducing Deforestation and Degradation, taking into account sustainable development objectives). Currently potential conflict between agriculture and forestry – lots of criticisms of REDD (who will benefit at the expense of whom, and will it actually achieve overall mitigation or flood carbon markets/trigger leakage, will it encourage monocultural plantations, impact on indigenous peoples?)

NAMAS: (Nationally Appropriate Mitigation Actions agreed at Bali 2007). Suggestions that agriculture forms part of Nationally Appropriate Mitigation Actions: undertaken by developing countries in conjunction with sustainable development policies and with support from developed countries. Adaption in NAPAs (National Adaptation Programmes of Action) – for least developed countries.

FAO suggestion: Establishment of a globally coordinated REDD-like initiative to test MRV (measuring, reporting, verification) methodologies and incentive/payment schemes, and to build readiness, possibly with:

- a global agricultural land management accounting and trading system;
- a smallholder agriculture climate change readiness fund, linked to a public-private trust fund serving as a market incubator to buy emission reductions from early action agricultural mitigation projects from smallholder farmers

Terrestrial Carbon Group suggestion: Establish global terrestrial carbon pools (above and below ground biomass). Nations may emit an agreed volume of the original unprotected terrestrial carbon (an annual terrestrial carbon budget) each year with no penalty. If the nation emits less than its annual terrestrial carbon budget in a year, it can sell the difference as terrestrial carbon credits (and must add that volume of terrestrial carbon to its protected category, safeguarding the permanence of the avoided emissions). If the nation emits more than its annual terrestrial carbon budget in a year, it cannot participate in the system until it reverses the excess emissions. The fixed period could be set on a nation-by-nation basis to best reflect national business as usual scenarios. A nation can generate credits for any new terrestrial carbon it creates. Trade in Terrestrial Carbon Credits.

7. Post farm gate implications

Nothing in the text or in general discussions of the knock on effect of any Copenhagen agreement for food businesses post farm-gate. The impacts of any climate change negotiation for business are likely to result from agreements on energy and overall targets.

8. Useful reading

Nelson G (ed) 2009. *Agriculture and Climate Change: An Agenda for Negotiation in Copenhagen*, IFPRI, 2020 Vision series

<http://www.ifpri.org/publication/agriculture-and-climate-change>

Enabling agriculture to contribute to climate change mitigation: A submission by the Food and Agriculture organization of the United Nations, FAO

IFPRI webinar: This is a recording of a side-event in the June UNFCCC meeting in Bonn 2009 – all the presentations are available as a webcast here: http://unfccc2.meta-fusion.com/kongresse/090601_SB30_Bonn/templ/ply_page.php?id_kongresssession=1783&player_mode=isdn_real

Tennigkeit T and Wilkes A (2008). *Carbon finance in rangelands: An assessment of potential in communal rangelands*, World Agroforestry Centre, Kunming, China September 30th 2008
Reading on REDD

<http://www.globalcanopy.org/main.php?m=117&sm=176&t=1>

<http://www.foei.org/en/publications/pdfs/redd-myths/view>
<http://www.redd-monitor.org/tag/foe/>

Brown D and Bird N (2008). The REDD road to Copenhagen: Readiness for what? ODI Opinion 118, Overseas Development Institute

Bellarby, Foereid, Hastings and Smith Cool farming (2008): *Cool farming: Climate impacts of agriculture and mitigation potential*, report produced by the University of Aberdeen for Greenpeace

Smith P, Martino D, Cai Z, et al. *Agriculture*. In: Metz B, Davidson OR, Bosch PR, Dave R, Meyer LA, eds. *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)*. New York: Cambridge University Press, 2007.

How to include terrestrial carbon in developing nations in the overall climate change solution, The Terrestrial Carbon Group, terrestrialcarbon.org, July 2008

IISD (2009) Summary of the Climate Change Talks 1-12 June 2009 (26pp), Earth Negotiations Bulletin Vol. 12 No. 241 <http://www.iisd.ca/climate/sb30>

Tawney, L. (2009) Agriculture: a necessary complication in the climate change negotiations. <http://www.grist.org/article/2009-06-10-agriculture-Bonn-climate>

Taking Stock after the Bonn Climate Change Talks: An ARD Perspective, Global Donor Platform for Rural Development, No 1 June 2009

GDPRD (2009) Platform Briefing Note Agriculture and Climate Change Issue 1, May 2009 <http://www.donorplatform.org/content/view/257/207>

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