Future Agricultures

Policy Brief

Agriculture and Climate Change in the UN climate Negotiations

Overview

Agriculture is both victim and villain in respect of climate change. Victim because most estimates indicate that climate change is likely to reduce agricultural productivity, production stability and incomes in some areas that already have high levels of food insecurity. Villain because agriculture is a key source for greenhouse gas (GHG) emissions: it is the largest source of global emissions for nitrous oxide, predominantly from chemical fertilisers; a major emitter of methane, predominantly from livestock reduction, and also a significant source of carbon emissions from land use change, mainly deforestation, but also peat degradation, peat fires and food processing. Yet agriculture may also be part of the climate change solution: There is a considerable, albeit uncertain, technical potential for carbon storage in soils, particularly in developing countries.[1]

This briefing paper aims to:

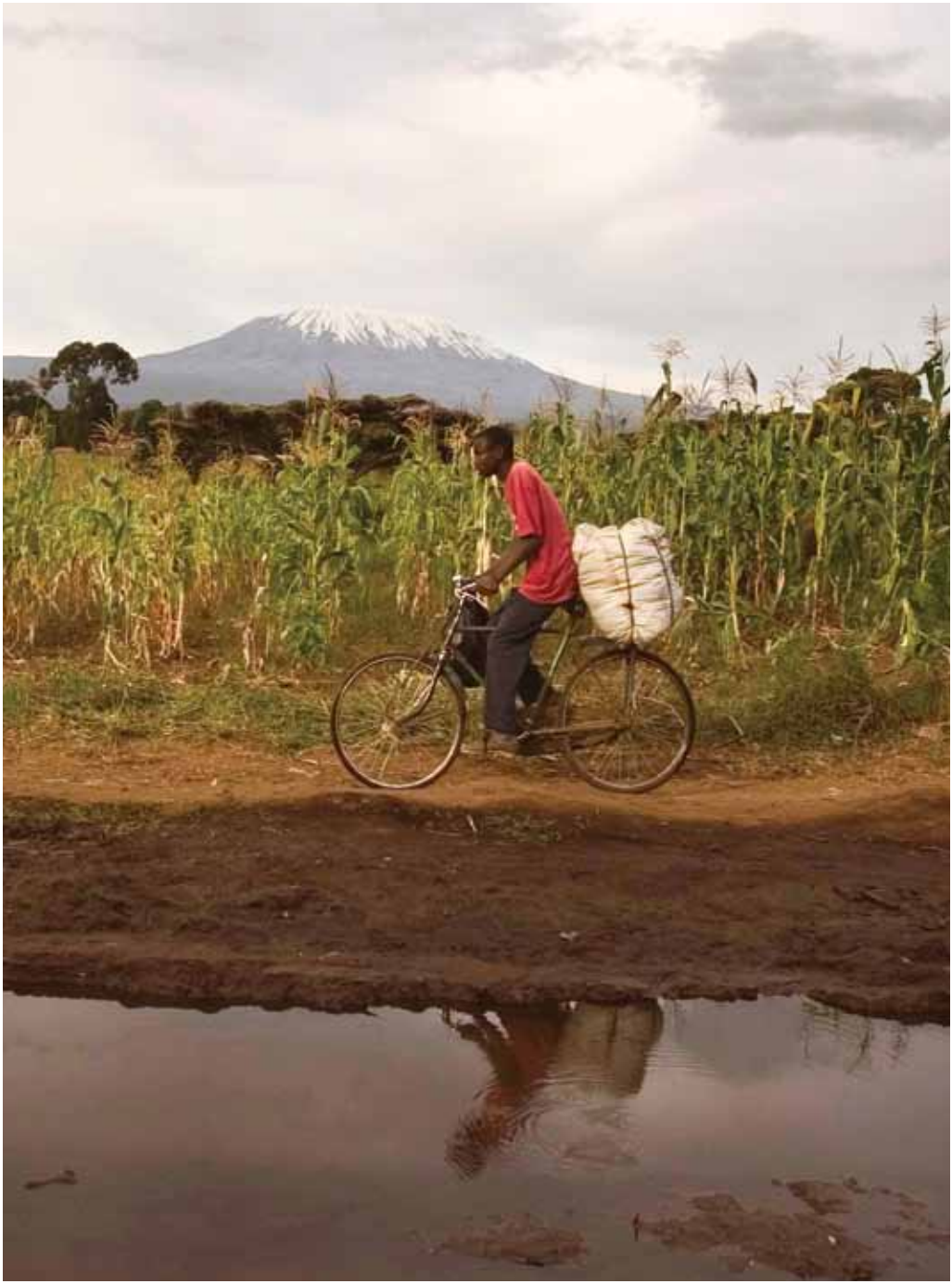
- Unscramble the various issues around agric• Unscramble the various issues around agriculture which have become conflated in the climate negotiations
- Outline what is formally being sought in negotiation text under the Climate Convention (UNFCCC) and assess whether this is a useful route and what other courses might be possible.

Core issues of the Climate Convention

Agriculture is a major issue for international discussion fora, notably the World Trade Organisation (WTO), in view of its fundamental role for food production and livelihoods. For many players new policy space emerged as the climate change finance agenda started to unfold with new climate funds established around the United Nations Framework Convention on Climate Change (UNFCCC).

Concerns about agriculture being a neglected area in the climate change negotiations seem to be wide of the mark to those who have been long involved on the climate change side.[2] It is often overlooked that the core objective of the UNFCCC as stated in its Article 2 is about food production:

"The ultimate objective of this Convention is…… stabilisation of greenhouse gas (GHG)



Photograph: Petterik Wiggers, Panos

emissions in the atmosphere at a level that would prevent dangerous interference with the climate system. Such a level should be achieved within a timeframe sufficient to allow ecosystems to adapt naturally to climate change to ensure food production is not threatened."

Further, successive assessments by the UN Intergovernmental Panel on Climate Change (IPCC) have drawn attention to the potential impacts of climate change on agriculture and the role that agriculture plays in contributing to climate change. However, that does not mean that agriculture is or should be at the heart of the UNFCCC negotiations. Its core role as part of the set of Rio 1992 treaties, is to get GHG emission cuts, not discuss agricultural policy. The Rio compact was about developed country leadership and delivery of finance and technology transfer, but these countries have failed to deliver the needed cuts so far and other support they had promised. Now there is the double whammy: the need for adaptation to now unavoidable climate change as well as deeper emission cuts to avoid dangerous climate change. And, as the world has changed since Rio with rapid economic growth in emerging economies, without developing country involvement in the decades ahead, GHG cuts from developed countries will be undermined.

It should be noted that many other parts of the UN institutional set up deal more directly with poverty alleviation. The UNFCCC is a government to government negotiation, and not about poor people *per se*. Vulnerability is defined in terms of types of developed versus developing countries (Annex 1 and Annex 2) and physical conditions (Article 4.8). This may in part be because 1992 was before the emergence of many large middle income countries, and developing countries could be regarded as a more homogeneous group of poor countries. Least Developed Countries (LDCs) did get special mention, and they have emerged as a special case with Small Island Developing States (SIDS) more strongly within the UNFCCC negotiations. However, there are many millions more poor people in vulnerable coastal zones in China.[3] This point is being made as contested issues in agriculture relate to the role of smallholder agriculture, but poverty alleviation is not in fact core territory for the UNFCCC. Global cross-cutting issues are now being picked up again around the Rio+20 event in 2012 with its theme of the green economy in the context of sustainable development and poverty reduction.

To achieve a global deal, the UNFCCC negotiations since the Conference of the Parties (COP) to the Convention in Bali in 2007 have increasingly focused on the financial dimension. Resources are needed for compensation for damage caused by climate change to support adaptation activities, and also to stimulate and deliver new low carbon emission pathways in all countries. New financial mechanisms have been devised under the UNFCCC, notably the Clean Development Mechanism (CDM) on the mitigation side where there are several agriculture related approved methodologies and projects running. On Adaptation, the new Adaptation Fund (AF) is now operational, an umbrella Green Climate Fund is under development with its transitional committee and over the last 5 years there have been intensive negotiations within the UNFCCC on the establishment of REDD or REDD+ mechanisms. As agriculture is a major driver of forest clearance many have called for integrated solutions that align agricultural development policies and REDD+.[4]

Agriculture and the UNFCCC

Approaches to emissions from agriculture in the UNFCCC have been framed by developed country issues, in line with the legal obligations that are already in place up to 2012 to cut emissions under the Kyoto Protocol (KP). There is a

draft text under the KP track of the negotiations for a post 2012 deal, (which basically covers developed countries) to allow agriculture and soil carbon be part of the CDM.[5] It has always been understood within the work of the Intergovernmental Panel on Climate change (IPCC) that there were large carbon sinks in soils and that certain forestry or agricultural practices could reduce emissions which are unstable and easily lost during cultivation, or possibly increase stores. However, because of the immense difficulties in measuring carbon and in view of the need for environmental integrity, this route was excluded during the negotiations up to Kyoto.

In response to perceived progress on delivery of a financial mechanism on forestry, and the explosion of interest in climate change before Copenhagen, key stakeholders from the global agriculture scene (such as the Food and Agriculture Organization (FAO) and the Consultative Group on International Agricultural Research (CGIAR) started to undertake advocacy activities around the fringes of the UNFCCC meetings, and convening side events around the negotiations. Advocacy groups note progress covering ongoing? projects in the side events at last year's COP in Cancun, within REDD++ (Reduced Emissions from Deforestation and forest Degradation (REDD) with forest conservation and enhancement included in REDD+, and land use aspects in REDD++) and at the Agriculture and Rural Development and Forest Days, as well as a focus on bottom-up and voluntary projects, and with associated Voluntary Carbon Standard (VCS) methodologies. These side events are however outside the formal negotiations.[6] The aim of FAO and CGIAR has been to put agriculture on the agenda in the UNFCCC, as well as to pursue investment opportunities as part of the Global Climate Fund; create incentives to reduce emissions and support technological change; and provide information on the verification of soil management.[7] Some side events have been concerned explicitly with delivering financial benefits to the agriculture sector, and the focus has been on the mitigation side. These side events can give the reality of progress, but are in no ways linked into the formal negotiations. With the UNFCCC facing road blocks, there is already evidence that interest groups are now switching attention back to next year's Rio +20 summit.

Agriculture is linked to four aspects of the UNFCCC:

1. Umbrella text from the Ad-hoc Working Group on Long-term Cooperative Action (AWG-LCA)

The main achievement of advocacy on agriculture so far has been the compilation of draft text on agriculture cooperative sectoral approaches and sector-specific actions in agriculture within the AWG-LCA strand of the negotiations (UNFCCC/AWGLCA/2009, p. 43).[8] This sets up a comprehensive work programme under the Subsidiary Body for Scientific and Technological Advice (SBSTA), covering work on the mitigation activities of the sector under Article 4.1. Reference is however made in the preamble to research and development to support productivity of systems in a sustainable manner and adaptation to contribute to food security and sustainable livelihoods. The text also acknowledges the rights of small and marginal farmers and indigenous people, but there could also be a link here to trade dimensions. However, the work programme is not yet established as this text was blocked both at the COP in Cancun last year and the negotiations in Bonn, June 2011, due in part to nervousness about potential links to trade issues.

2. The Clean Development Mechanism (CDM)

The CDM is currently the key mechanism which allows for the sale of credits to developed country governments generated by mitigation

projects in developing countries. Early beneficiaries have not been the LDC group, but China, India, Brazil, Mexico and Korea and most projects have been large industrial projects covering HFC23 and N_2O. For example in Mexico, half of all CDM credits benefit pig farms with methane reduction, and soya and palm oil plantations for biofuels and eucalyptus plantations for charcoal have become eligible under the CDM. Soil sequestration carbon has been specifically excluded in the CDM because of major uncertainties in measuring and verifying the permanence of soil carbon stores. But there has been a major push to change this by those with interests in promoting technology and economic growth approaches to agriculture, such as FAO and some governments. Some NGOs are concerned that small scale farmers cannot afford the same level of lobbying as large-scale agriculture and plantation corporations. However, measures are now being put in place to provide technical assistance to increase capacity in Africa and the LDCs. Many concerned with Africa think that creating opportunities to price carbon embedded in land use and forestry systems could benefit countries with low emission levels but that also have potential opportunities for greenhouse gas mitigation in this sector.[9]

3. Nationally Appropriate Mitigation Actions (NAMAs)

NAMAs are voluntary and not legally binding, and contingent on the provision of adequate finance technology and capacity building, as well as the delivery of ambitious targets and actions by developed country parties. Amongst the submissions received by the UNFCCC in March 2011 for the NAMA registry, around 35 stated specifically that they planned to adopt mitigation actions in the agriculture and forestry sectors.[10] FAO analysis has shown that policy statements on NAMAs that have been submitted by LDCs typically focus on smallholder agriculture, whilst those for the Comprehensive African Agricultural Development Programme (CAADP) are generally focused on improving productivity and returns to small-scale agriculture.[11] On the forestry side, there has been a concern that NAMAs could get round the robust reporting which is being established through REDD.

4. Technology Mechanism (TM) and Technology Needs Assessments (TNAs)

TMs and TNAs have been undertaken within the technology transfer strand of the UNFCCC negotiations. Analysis of TNAs in 2009 showed that in 70 TNAs, 26 per cent of mitigation technologies and 43 per cent of adaptation technologies relate to agriculture and forestry.[12] The Cancun Agreement (COP16 in 2010) includes the creation of a Technology Mechanism (TM) comprising of the Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN). The TEC will strengthen the development and deployment of new technologies and the CTCN will be the mobilisation network providing support and collaboration to develop and transfer technologies. Agriculture could possibly become a focus for thematic attention within this framework, if funding is established. There is pressure to get the TM mobilised this year.

Key issues and perspectives

Monitoring, Reporting and Verification (MRV)

All the potential GHG cuts associated with agriculture are very difficult to measure, monitor and verify and in fact use of these routes even for the developed countries has been constrained. For example, there has been tremendous pressure to get agriculture and land use within the European Union Emissions Trading Scheme (EU ETS) by land owning and

farmers' interest groups in Europe, but due to measurement problems this has been resisted. There are already serious problems with probity and fraud within the ETS registries. There is a Voluntary Carbon Standard methodology for agriculture and projects running but we are likely to be a long way from formalising these projects into significant approved programmes with carbon credits openly traded as a substitute for other emitting activities.

Food security

One new driver is the increased attention being given to sustainable agricultural intensification as a means to produce more food per unit of land and to achieve economic, environmental and social objectives. The challenge of feeding nine billion people, with growing competition for land, water and energy, and the threat of the effects from climate change, have been called "the perfect storm". The goal is no longer to simply maximise productivity but to optimise across a far more complex landscape of production, environmental and social justice outcomes".[13] The emergence of food security is thus being explored in several fora.

Merits of carbon markets for agriculture

Whilst there could be some potential for a new income stream if ways could be found to incentivise carbon retention in soils in small holder production systems, there are major concerns arising from those concerned about the more ecological and participatory agriculture narratives. One concern is that increased funds for agriculture though climate could incentivise land grabbing and Econexus have opposed the inclusion of soil in carbon markets. This perspective stresses that resilient ecosystems are fundamental to addressing climate change, water scarcity and food insecurity.[14] Other identified problems are that food price volatility could be exacerbated and excessive speculation encouraged.[15] Econexus has calculated that land-use change driven by the demand of industrial agriculture leads to the production of well over 18 per cent of global emissions through the burning of above ground biomass and the loss of soil carbon, while destroying or degrading the ability of ecosystems to help regulate the climate. The concern is that if offsetting through soil carbon sequestration is permitted, it will incentivise the large-scale application of contested technologies, in particular no-till (bio) technology and biochar.[17] The alternative proposed is local, context-specific ecological approaches to sustainable support that rebuild fertility and enhance productivity in order to build resilience to climate change whilst reducing emissions.

The role of adaptation

As it has been the mitigation side of the climate change agenda that has dominated, less attention has been paid by the agricultural stakeholder groups to adaptation, which is surprising as this should now receive 50per cent of climate change funding. Many civil society groups are concerned that the deal on the UNFCCC will lead to an increased drive to the embedded narratives of technology, production and economic growth[18] rather than the agro-ecology and participation narratives which would protect the livelihoods of small farmers and provide sustainable environmental protection.[19] These important issues tend to be addressed only within climate adaptation debates, as are concerns about climate finance providing new incentives for land grabbing. However, as funds move towards adaptation, there will be more opportunities for advocacy groups to engage and promote these perspectives more broadly.

The Vision from Africa

Addressing agriculture within the UNFCCC has been identified as a major issue by advocacy groups in Africa. In Sub-Saharan Africa, agriculture, forestry, and land use (commonly referred to as AFOLU) is thought to hold the most promising potential for carbon finance. The argument goes:

- Agriculture is the backbone of Africa's livelihood, and
- A climate change deal which does not include Agriculture, Forestry and Other Land Uses (AFOLU) is NO DEAL [20]

So far Africa has played a limited role in both the CDM and voluntary markets. Several barriers have limited access to carbon markets including:

- Lack of supportive Government frame-works
- Inadequate infrastructure and poor governance
- Limited experience and capacity with carbon markets
- Limited scope for AFOLU projects under the CDM
- Lack of industrial development and low grid emissions factors in Africa
- Overall high transaction costs for project development [21]

However there is a considerable number of initiatives supporting preparation for REDD+ activities and direct funds being invested in the region under the World Bank's Biocarbon Fund and through the Africa Biocarbon Initiative, which is promoted by COMESA (Common Market for Eastern and Southern Africa), SADC (Southern African Development Community) and EAC (East African Community).[22]

Currently the carbon market is driven by buyers' preferences and has shown little interest in supporting genuine poverty eradication and sustainable development in Africa's largely agrobased economies. Notably, the less industrialised African countries already store significant amounts of carbon in their soils and forests. It is the conviction of COMESA, SADC and EAC regional blocs that these countries should be recognised and rewarded for contributing to addressing climate change through sustainable agriculture, forest management, and other environmental conservation practices.[23]

The November 2008 Nairobi Declaration on Climate Change adopted by the COMESA Ministers of Agriculture and Environment advocates for the inclusion of all bio-carbons in the post 2012 climate change regime. It also notes that the continent cannot afford to wait any longer and demands that the rules for a post- Kyoto agreement must change. COMESA, in conjunction with SADC and EAC, mandated FANRPAN (Food, Agriculture and Natural Resources Policy Analysis Network) to mobilise African Civil Society Organisations (CSOs) under the Africa-wide Civil Society Climate Change Initiative for Policy Dialogues (ACCID) and facilitate dialogue around the Africa Bio-Carbon proposal. The main objective of these dialogues is to ensure alignment between African governments and CSOs with regard to Africa's approach to tackling the current Climate Change negotiations and beyond.

Potential strategies

Two issues have been merged and it is now time to clearly separate them. The overall goal before Copenhagen for many was to put agriculture on the agenda of the UNFCCC. The other key issue has been to get financial resources for incentives and a coherent delivery system underpinned

by knowledge. In many ways the first has been achieved and agriculture and climate change issues have a much higher profile and are being explored within several fora. The second issue is proving more problematic. Perhaps, more attention should be paid to the NAMA route, potentially an agriculture component within the technology mechanism, with the longer term goal of a REDD type mechanism, with adequate safeguards. Also the emerging Technology Mechanism should be tracked to see if opportunities open up there.

The main strategy for advocacy groups has been a REDD type mechanism for agriculture. It is most unlikely that there will be a systematic funding mechanism agreed at the upcoming Conference of the Parties (COP) in Durban later this year, which can be similar or part of a REDD approach, for reductions in the greenhouse gas emissions associated with agriculture. Preparations are also currently stalled in relation to the LCA text as it has been associated with problems around trade rules. At Cancun, it was anticipated that there would be progress on text for inclusion of agricultural emissions reduction activities in NAMAs and possibly too an addition to the REDD or REDD+ language.[24] The aspiration is that landscape-based approaches that combine both agriculture and forestry could optimise terrestrial mitigation and adaptation.[25] However it is recognised that MRV systems and incentive systems would have to be agreed and developed for agricultural activities if the NAMA route developed.

Advocacy groups for agriculture are using REDD+ as a model, and it has been a useful learning experience and provided momentum. The REDD agenda made progress in Cancun: The agreements include specific text to ask developing countries to prepare strategies, develop reference levels and create monitoring systems for REDD+, as well as a SBSTA work programme to be established to address drivers and methodologies, and the exploration of REDD+ financing options under the AWG-LCA. However, in the REDD community, there has been concern that the less developed agricultural agenda would slow progress on REDD within the negotiations despite obvious conceptual and political linkages between agriculture and forestry. At the same time, agriculture is different in its "higher levels of methane and nitrous oxide emissions, lower potential for carbon sequestration, higher reversibility, politically sensitive security and trade issues, [and] higher transactions costs involving numerous owners and complex incentives".[26]

There is evidence of a more measured, multi-track approach emerging amongst advocacy groups focused on agriculture. A medium term strategy would be to bridge the separate approaches by the agriculture and forestry sectors. Developed and developing country contexts could help integrate land use activities in a meaningful way in the UNFCCC that could optimise climate mitigation and adaptation while enhancing food security.[27] An integrated approach would enable better management of the trade-offs and synergies. Proposed actions of CGIAR and the Earth System Science Partnership (ESSP) are: development of a shared vision amongst technical experts, policy makers and practitioners; analysis of high priority mitigation options and impacts; coordination of efforts and increasing flows of funding, initially by leadership from anchor donors who invest through bilateral agreements and multi-lateral programme. This approach could underpin further progress on NAMAs and within the Technology Mechanism.

These approaches are part of sustainable intensification that promotes climate mitigation and food security as a knowledge based rather than a resource intensive approach.[28] It is likely multi-track approaches will open up from development agencies outside the development framework.

For example, in Cancun the World Bank President announced the Green Climate Fund, a multi-million fund set up to help developing countries set up their own climate markets, and made a strong statement for the inclusion of agricultural mitigation activities including soil sequestration within these markets. Pledges were received from several donors including the US, Australia, EU, Norway, UK, Germany and Japan.

Apart from the UNFCCC there are other global political and associated research processes underway. The Road Map for Action on Agriculture, Food Security and Climate Change begun in the Hague in 2010 and will continue with the next conference set is to take place in Vietnam 2012. There is a major research initiative including the Global Research Alliance on Agricultural Greenhouse Gases and CGIAR's Research Program on Climate Change, Agriculture and Food Security (CCAFS) with the Earth System Partnership. There is also the Commission on Sustainable Agriculture and Climate Change, which is an initiative of CCAFS, with additional funding from the Global Donor Platform for Rural Development. The Commission will identify what policy changes and actions are needed to help the world achieve sustainable agriculture in the face of climate change. Finally, within the Rio+20 process there may be scope to take advantage of any positive outcomes: the UN Secretary General's report recognizes that "agriculture will be a key sector for poverty alleviation and for the transition to sustainable societies" and that major efforts are needed to develop systems that provide decent incomes, livelihoods and at the same time reduce emissions, consume less water and maintain soil fertility and biodiversity[29]

Photograph: Jocelyn Carlin, Panos

Endnotes:

[1] However there is no consensus about the economic feasibility of measuring changes in soil carbon over long time periods or attributing the changes to land management, but some new innovatory work is underway- see Wollenberg, E. and Negra, C. 2011 Next steps for climate change mitigation in agriculture. CCAFS Policy Brief No2 CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS . Copenhagen. www.ccafs.cgiar.org; and International Potato Centre. Measuring soil carbon as a tool for mitigating climate change (undated).

[2] See FAO, 2010 Towards a Work programme on Agriculture. A submission to the AWGLCA by FAO

[3] Hedger, M and T Tanner (2008) Does climate change alter the agenda for the bottom billion? IDS In Focus Issue 03 Concern for the Bottom Billion March 2008. www.ids.ac.uk.

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[5] See FCCC/KP/AWG/2010/6/Add.2

[6] Coalition on Agricultural greenhouse gases (C-AGG) 2011 Post Cancun /COP16 Perspectives on Agricultural issues within the UNFCC.

[7] 2020 Focus brief: Agriculture and Climate Change: an Agenda for negotiation in Copenhagen IFPRI

[8] The Bali Action Plan agreed at COP 13 in Bali established two negotiating tracks in 2 different Ad-hoc Groups (AWGs): one the which includes developing countries on the Long Term Cooperative Action (LCA) , the second Kyoto Protocol (KP) track focuses on developed country parties.

[9] Ellis, J. and Kamel, S. (2007) Overcoming Barriers to Clean Development Mechanism Projects, Paris: OECD COM/ENV/EPOC/IEA/SLT

[10] Smart Agriculture: Policies, Practices and Financing for Food Security, Adaptation and Mitigation, Rome: FAO

[11] FAO 2010 Climate Smart Agriculture

[12] FCCC/AWGLCA/2011/INF1 Compilation of information on nationally appropriate mitigation actions to tbe implemented by parties not included in Annex I to the Convention 18 March 2011.

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[15] Institute for Agriculture and Trade Policy 2011 Five reasons carbon markets won't work for agriculture. April 2011 and also GAIA Foundation Briefing April 2011. Clear as Mud: why agriculture and soils should not be included in carbon offset schemes.

[17] Ensor J, A Ernstung, S.Gura and H Paul Agriculture e and soils in carbon trading. Practical Action. Econexus and Biofuel watch

[18] Thompson, J. E Millstone, E. Scoones, A.Ely, F Marshall, E Shah and S Stagl (2007) Agri-food system dynamics: pathways to sustainability in an era of uncertainty STEPS Working Paper 4 Brighton STEPS Centre

[19] See for example, Econexus and Biofuelwatch The carbon market dream: millions of offsets from land-use sinks. Briefing for the Cancun Climate Negotiations, November 2010 Some crucial biodiversity principles for the climate debate

[20] FANRPAN 2008 The Africa Biocarbon Initiative Powerpoint presentation Francis Hale

[21] Ecosecurities 2009 Land and Climate Change Finance in central Africa. Report to the Global mechanism of the UNCCD.

[22] FANRPAN 2008 The Africa Biocarbon Initiative Powerpoint presentation Francis Hale

[23] *ibid.*

[24] Coalition on Agriculture Greenhouse Gases C-AGG Agriculture in the YNFCCC: Post Cancun/ COP16 perspectives on Agricultural Issues within the UNFCCC, January 2011.

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[26] Negra, C. and Wollenberg E2011.CGIAR and ESSP 2011 lessons from REDD+ for Agriculture CCAFS Policy Brief. CGIAR research program, Climate Change, Agriculture and Food security (CCAFS), Copenhagen. www.ccafs.cgiar.org.

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[28] *ibid.*

[29] UNGA A/CONF.216/PC/7 22-12-10 Preparatory Committee for the UN Conference on Sustainable Development (UNCSD) Second session 7-8 March 2011. Objectives and themes of the UNCSD. Report of the Secretary General.

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The Future Agricultures Consortium aims to encourage critical debate and policy dialogue on the future of agriculture in Africa. The Consortium is a partnership between research-based organisations across Africa and in the UK. Future Agricultures Consortium Secretariat at the University of Sussex, Brighton BN1 9RE UK **T** +44 (0) 1273 915670 **E** info@future-agricultures.org

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