

ICTSD-IPC Platform on Climate Change, Agriculture  
and Trade: Promoting Policy Coherence

Policy Focus  
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## International Climate Change Negotiations and Agriculture



International Centre for Trade  
and Sustainable Development

International  
Food & Agricultural Trade  
Policy Council



# Policy Focus

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### 1. Introduction

Agriculture will be greatly impacted by climate change and will require substantial adaptation efforts. At the same time, the agricultural sector is responsible for a significant amount of global greenhouse gas emissions, and has an important potential role in climate change mitigation. While its importance is recognized, agriculture has not figured largely in the international climate change negotiations to date. It is, however, expected to figure more prominently, as witnessed by the first ever workshop on agriculture recently held as part of the negotiations in Bonn.<sup>2</sup>

The purpose of this paper is to provide an overview of the existing international climate change agreements and the international negotiations underway and to point out the ways in which the agricultural sector – is – or may be – addressed in the international climate regulatory framework. This overview is not intended to be a comprehensive analysis; rather it seeks to provide background information, outline options and identify areas which could usefully benefit from further analysis. We emphasize the non-technical nature of the paper, which is mainly intended to inform stakeholders interested in agriculture, who may not yet be familiar with the climate change negotiations. Readers are encouraged to refer to other sources, including those referenced here, for more detailed technical information.

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The brief will examine the United Nations Framework Convention on Climate Change (UNFCCC), which entered into force in 1994, and the Kyoto Protocol to the UNFCCC, adopted in Kyoto, Japan, on 11 December 1997, that entered into force on 16 February 2005. We then focus on options and proposals for addressing agriculture-related issues in the Bali Road Map, which is to conclude in Copenhagen in December 2009.

First, we present a very brief overview of key adaptation and mitigation findings. Although more detailed and location-specific research is required, the Intergovernmental Panel on Climate Change's (IPCC) key findings on adaptation were that while warming is expected to decrease yields in the tropical and sub-Saharan regions, yields may actually increase in temperate regions.<sup>3</sup> Sub-Saharan Africa was singled out as a region where climate change may increase the amount of people at risk of hunger. There are agricultural adaptation measures, such as changes in agricultural practices and relocation of agricultural production, but the report warned that adaptation will be very difficult in low latitudes if temperatures increase by more than 3°C.

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1 This paper was drafted by Charlotte Hebebrand, Chief Executive of IPC, with important input from members of the ICTSD-IPC Platform on Climate Change, Agriculture and Trade -[http://www.agritrade.org/events/ClimateChangePlatform\\_000.html](http://www.agritrade.org/events/ClimateChangePlatform_000.html). Hernan Carlino, Steven Cox and Daniel Martino provided very useful comments.

2 [http://unfccc.int/documentation/documents/advanced\\_search/items/3594.php?rec=j&preref=600005198#beg](http://unfccc.int/documentation/documents/advanced_search/items/3594.php?rec=j&preref=600005198#beg)

3 The IPCC's fourth assessment report, published in 2007, included a chapter on Agriculture. Coordinating authors are Pete Smith (UK) and Daniel Martino (Uruguay). <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter8.pdf>

According to the IPCC, agriculture accounts for some 13.5% of total anthropogenic GHG emissions. Combined, emissions from agriculture and deforestation – of which agriculture is a key driver – account for more emissions than the transport sector. Agricultural emissions make up 47% of global anthropogenic emissions of methane (CH<sub>4</sub>) and 58% of global nitrous oxide (N<sub>2</sub>O). N<sub>2</sub>O emissions from soils and CH<sub>4</sub> emissions from enteric fermentation constitute the largest sources of non-CO<sub>2</sub> emissions, with biomass burning, rice production and manure management accounting for the rest. Key agricultural mitigation actions include reducing CH<sub>4</sub> emissions via improved livestock, manure and rice management, and reducing N<sub>2</sub>O emissions via improved fertilizer practices and manure management. Moreover, CO<sub>2</sub> can be sequestered in soils via improved crop- and grazing land

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management. Lastly, agriculture can contribute to mitigation by avoiding emissions via efficiency improvements and substituting for fossil fuels.

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## II. The international architecture to address climate change and its evolution – links to agriculture

The United Nations Framework Convention on Climate Change (UNFCCC), adopted in 1992, was the first multilateral agreement on climate change to set a goal of reducing greenhouse gas emissions. The Kyoto Protocol to the UNFCCC was adopted in 1997, and set binding commitments to reduce emissions. Negotiations underway now take place under both the UNFCCC and the Kyoto Protocol, including on a new and more aggressive emissions reductions commitment, and are meant to conclude at a summit to be held in Copenhagen in December 2009.

It is useful to point out that under the UNFCCC, Annex I lists developed countries and countries undergoing the process of transition to a market economy, which are called upon to undertake certain measures. The Kyoto Protocol, which was not ratified by all Parties who had signed the UNFCCC (including the US), lists this category of countries in its Annex B, and indicates their quantified emission limitation or reduction commitment. For the purposes of this paper, we will simply refer to two categories of countries – Annex I and non-Annex I.

### II.A The United National Framework Convention on Climate Change

In response to calls for a global treaty to address climate change, the UNFCCC was adopted in 1992, including most notably the principles on which climate efforts and actions are to be based. Its

The Convention recognizes the importance of food production, stressing that stabilization of the atmospheric concentration of greenhouse gases should be “achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development in a sustainable manner” (Art.2).

Article 2 not only stipulates the ultimate objective of the Convention, to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, but also specifies that this objective should be achieved in a manner that allows sustainable development to proceed.

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The UNFCCC emphasizes that “ economic development is essential for adopting measures to climate change“ (Art.3.4), and calls for “common but differentiated responsibilities“ to be

reflected in the actions of developed and developing countries, and cautions that “measures to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade” (Art.3.1; 3.5).

The UNFCCC committed all Parties to develop, periodically update and make available national inventories of anthropogenic emissions by sources and removals of sinks, and to formulate, implement, publish and regularly update national or regional programs containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks and measures to facilitate adequate adaptation to climate change (Art.4.1 (a) and (b)). However, developing country Parties that are not included in Annex I of the Convention should do so only if the necessary funding is provided by Annex I countries: “The extent to which developing countries will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments...related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties” (Art.4.7). It also calls for the promotion, application and diffusion of technologies and practices, and requires processes to reduce or limit emissions in economic sectors, which include agriculture and forestry (Art.4.1(c)), and calls upon parties to cooperate in preparing for adaptation to the impacts of climate change, referring in particular to water resources and agriculture (Art.4.1(e)).

Annex I countries were given more specific commitments: they were asked to adopt national policies and measures on the mitigation of climate change by limiting anthropogenic emissions of greenhouse gasses and protecting and enhancing greenhouse gas sinks and reservoirs. They also were given the goal of returning by 2000 to their 1990 emissions levels (Art.4.2(a and b)). Towards this end, they were asked to submit annual reports on the policies and measures they adopt and to communicate the resulting projected emissions by sources and removals by sinks.

## II.B The Kyoto Protocol

New information on the challenges that climate change posed to social, economic and environmental systems and the range and severity of projected impacts became available through the IPCC's Second Assessment Report in 1995, which provided a new sense of urgency and helped inform the negotiation of the Berlin Mandate which led eventually to the Kyoto Protocol. The Conference of the Parties (COP), the supreme body of the Convention, responsible for keeping the implementation of the UNFCCC under review and adopting related legal instruments, adopted the Kyoto Protocol to the UNFCCC in 1997. The principle of equity and common but differentiated responsibilities and respective capabilities was made effective in the Kyoto Protocol by requesting industrialized countries to take the leadership through quantified emission limitation and reduction objectives (QELROs). Thus, the Kyoto Protocol imposed a binding commitment on Annex I countries to reduce emissions by at least 5% - in aggregate - by the period 2008-2012 when compared to 1990 levels.

For Annex I countries, policies and measures are a means to achieve QELROs and progress in successfully implementing those measures is to be reported by means of annual inventories and periodic national communications. Under the Kyoto Protocol, non-Annex I countries continued with qualitative mitigation measures, without the obligation to quantify the outcome. There is no mandatory requirement for particular policies and measures. Reporting for non Annex I countries includes national communications, as well as "a general description of steps taken or envisaged" and in practice includes a section on mitigation programs. There was agreement in 1992 that Annex I Parties would make available the "full agreed incremental costs" for non-Annex I Parties to implement their commitments, including those related to mitigation of climate change, as well as assisting with technology transfer (UNFCCC Art.4.3). Agriculture is included in Art 10 of the KP, which calls upon all Parties to undertake measures to mitigate climate change and measures to facilitate adequate adaptation.

Land use activities, such as planting trees and managing forests, can increase the removal of GHGs from the atmosphere, whereas other activities, such as efforts to curb deforestation, can decrease the emissions of GHGs.

### II.B.1 Land Use, Land Use Change and Forestry (LULUCF)

The concept of Land Use, Land Use Change and Forestry (LULUCF) was already included in the UNFCCC, which emphasized the importance of preservation of stocks and enhancement of sinks. Land use activities, such as planting trees and managing forests, can increase the removal of GHGs from the atmosphere, whereas other activities, such as efforts to curb deforestation, can decrease the emissions of GHGs. The Kyoto Protocol importantly defined what must be accounted for and what may be accounted for. In meeting their QELROs, industrialized are required to protect and enhance sinks and reservoirs of greenhouse gases, taking into account commitments under relevant international environmental agreements; promote sustainable forest management, afforestation and reforestation and sustainable forms of agriculture (Art.2).

More concretely, the Kyoto Protocol allowed Annex I parties to include LULUCF activities in their efforts to meet their targets by calculating "net changes in greenhouse gas emissions by sources and

It is also important to point out that the addition of LULUCF measures to Annex I Parties' reduction commitments was agreed to after the establishment of the Kyoto targets – this limited its potential as a means for mitigating climate change. In order to achieve greater emissions reductions, critics charge, the inclusion of LULUCF should have led to more ambitious overall reduction targets, but this was not found acceptable by a number of Parties, among them the US.

removals by sinks resulting from direct human-induced land use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990, measured as verifiable changes in carbon stocks in each commitment period” (Art.3.3). Put in simpler terms, greenhouse gas removals achieved through afforestation and reforestation could be used to help meet the Kyoto Protocol's emissions targets. Greenhouse gas emissions stemming from deforestation, on the other hand, need to be subtracted from the overall amount of emissions an Annex I party was entitled to. Net changes in GHG emissions by sources and removals by sinks through direct human-induced LULUCF can therefore be used to meet Parties' emissions reduction commitments.

Allowing Annex I countries to include in their overall reduction commitments emissions by sources and removals by sinks resulting from land use, land use change and forestry (LULUCF) was a significant step. Such a

step had also been considered but ultimately not included during the UNFCCC negotiations, when it was mostly viewed as a way to offset emissions and avoid real reductions among major emitters.

Moreover, the Protocol empowered the COP to decide “how and which additional human-induced activities related to changes in greenhouse gas emissions by sources or removals by sinks in the agricultural soils and the land-use change and forestry categories” should be added to or subtracted from Parties' assigned reduction amounts (Art. 3.4). This provision allows Annex I countries to opt to include such measures in their annual reports and the emissions they account for.

It is also important to point out that the addition of LULUCF measures to Annex I Parties' reduction commitments was agreed to after the establishment of the Kyoto targets – this limited its potential as a means for mitigating climate change. In order to achieve greater emissions reductions, critics charge, the inclusion of LULUCF should have led to more ambitious overall reduction targets, but this was not found acceptable by a number of Parties, among them the US.

Concern was expressed about the potential reversibility and non-permanence of such an approach to meeting commitments, and that it might reduce the incentive to more aggressively reduce emissions from the energy and industrial sectors. Concerns also exist that expanding carbon credits to LULUCF would reduce the price of carbon.

More precise principles and rules for LULUCF activities were elaborated in the 2001 Marrakesh Accords.<sup>4</sup> These specified additional LULUCF activities alluded to in Art.3.4:

1. Forest management
2. Cropland management

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<sup>4</sup> [http://unfccc.int/cop7/documents/accords\\_draft.pdf](http://unfccc.int/cop7/documents/accords_draft.pdf)

3. Grazing land management
4. Revegetation

Only a few Annex I countries have opted to take advantage of Art.3.4. This can be partially explained by the fact that the accounting methodology requires comparison to a 1990 baseline of emissions or sequestration, and many countries do not possess sufficient data to establish such a baseline. A detailed examination of the inclusion of agriculture in both national communications plans and inventories does not exist to our knowledge and would be a worthwhile undertaking.

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### **II.B.2 Carbon Market Instruments – Clean Development Mechanism**

The Kyoto Protocol defines two main ways to achieve emission reductions: primarily by internal measures taken in Annex I countries and also through newly developed flexible mechanisms. Annex I countries are allowed to trade emission reduction units with each other under certain conditions for the purposes of meeting their reduction commitments – this is referred to as Joint Implementation (Art.6). Under joint implementation, an Annex I Party can implement LULUCF projects in another Annex I Party, but there are caps on the number of units that can be exchanged from LULUCF activities.

The CDM has essentially not captured the potentially significant mitigation potential in LULUCF in developing countries; to date there has only been one LULUCF project registered. It leaves out key LULUCF activities, and its project based approach has been too limited. Moreover, carbon credits from afforestation and reforestation under the CDM have not been sufficiently attractive to buyers due to their temporary nature.

The Protocol called upon the COP to define relevant principles, modalities and procedures and guidelines for emissions trading and listed parties which could participate (developed countries and economies in transition) (Art.17).

A further carbon market instrument established in the Protocol is the “Clean Development Mechanism” (CDM), which allows Annex I countries and private entities to finance project activities in developing countries, which result in certified emissions reductions and to count these in meeting their own quantitative emission reduction commitments, and assist non-Annex I Parties to achieve sustainable development (Art.12).

In 2001, Parties agreed that limited LULUCF activities (afforestation and reforestation) could be eligible for CDM projects, but greenhouse gas removals from afforestation and reforestation projects could only be used to help meet 1% of a Party’s emissions targets. Avoided deforestation was not included, whereas it is included under the LULUCF category for Annex I countries.

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from afforestation and reforestation under the CDM have not been sufficiently attractive to buyers due to their temporary nature.

### **III. Key Points on the existing climate change regime and agriculture**

- All countries are asked to submit national communication plans. These provide an overview of emissions from all sectors – including agriculture - and the policies being undertaken to mitigate them. Annex I countries tend to submit an updated communications plan every few years; many developing countries have quite outdated plans.
- In addition, Annex I countries must provide annual quantitative inventories of all their emissions, including agricultural emissions. They must include net emissions from afforestation, reforestation and deforestation, and can opt to include a number of additional human-induced activities related to changes in greenhouse gas emissions by sources or removals by sinks in the agricultural soils and the land-use change and forestry categories.
- Under the IPCC's 1996 Revised Guidelines for National Greenhouse Gas Inventories, Parties were provided separate guidance on reporting under agriculture and the LULUCF categories. The IPCC's 2006 Guidelines for National Greenhouse Gas Inventories, still under consideration, propose to integrate these two into one sector – the Agriculture, Forestry and Other Land Use Sector (AFOLU), based on the recognition that “the process underlying GHG emissions and removals, as well as the different forms of terrestrial carbon stocks, can occur across all types of land,” and with a view towards improving “the consistency and completeness in the estimation and reporting of GHG emissions and removals.”<sup>5</sup>
- The CDM is the only mechanism which facilitates agricultural emissions reductions in developing countries. LULUCF is confined to afforestation and reforestation and even those only in a limited way. Deforestation – essentially (now) a developing country phenomenon – is not addressed at all.
- Thus, although emissions in the AFOLU sector are predominantly located in non-Annex I countries, providing those countries with a significant mitigation potential, this has not been tapped under the existing regime.

### **IV. Towards a new Climate Change regime – the Bali Road Map and beyond**

By Montréal in 2005, the Protocol had entered into force, but there was insufficient progress towards meeting emissions reductions commitments. Moreover, there was less than complete participation, in particular of very relevant Annex I countries such as the United States. Parties, embarking on a review of the Protocol and on the implementation of the UNFCCC, agreed to launch a two-track approach. The “Bali Road Map,” adopted at the December 2007 UN Climate Change Conference in Indonesia,

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<sup>5</sup> 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4 Agriculture, Forestry and Other Land Use. [http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4\\_Volume4/V4\\_01\\_Ch1\\_Introduction.pdf](http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_01_Ch1_Introduction.pdf)

continues with the two-track approach: negotiations under the Convention in the Ad Hoc Working Group on Long Term Cooperative Action (AWG-LCA) and the negotiations in the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP), both of which are to be completed by the end of 2009. It still remains to be seen whether and how these two tracks may interact or be merged. In June 2009, the Chair of the negotiations will table the first draft of a negotiation text.

#### **IV.A. Negotiations in the Convention track**

The Bali Action Plan pertains to the new negotiating process under the UNFCCC to be completed by 2009. The negotiations in the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) aim at a comprehensive process to enable the full, effective and sustained implementation of the Convention through long-term cooperative action, now, up to and beyond 2012. The Bali Action Plan centers on four key issues: mitigation, adaptation, technology and financing. Negotiations on a long-term agreement should be based on a shared vision for long-term cooperative action, including a long-term global goal for emission reductions.

The negotiations should result in:

- Measurable, reportable and verifiable (MRV) nationally appropriate mitigation commitments or actions by all developed countries, including quantified emission limitation and reduction objectives, while ensuring the comparability of efforts among them, taking into account differences in their national circumstances; and,
- Nationally appropriate mitigation actions (NAMAs) by developing country Parties, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner.

The attempt was to retain the balance of mitigation commitments between Annex I and non Annex I parties. The language also acknowledges the need for commitments and action, including QELROs, by all developed countries– as well as MRV mitigation actions by developing countries.

It is generally understood now that BAP 1(b)(i) and 1 (b)(ii) apply MRV requirements to:

- i. Developed country mitigation commitments and actions
- ii. Developing country mitigation actions
- iii. Mitigation support in the form of finance, technology, and capacity building.

##### **IV.A.1 A Sectoral Agreements/Sector-specific actions**

The AWG-LCA discussions also encompass potential use of sectoral approaches – the idea is to complement overall reduction requirements with sector-wide agreements in key sectors, i.e. energy, transport, industry, building. The rationale behind such approaches is that for those sectors which are relatively more energy intensive and potentially most vulnerable to competitiveness constraints arising out of differentiated emission reduction requirements, it may be easier and fairer for countries to ensure a more level playing field via sectoral agreements. So far, discussions on a potential sectoral agreement have focused on the cement, steel and energy industries (i.e. those with relatively few, large

multinational emitters), but some parties have proposed that agriculture be selected for sector-specific actions focusing on the particular characteristics of the agricultural sector.

#### **IV.A.2 Reducing Emissions from Deforestation and Forest Degradation in Developing Countries**

The Bali Action Plan calls on the AWG-LCA to consider “Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries (REDD); and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD+).” Since agriculture is a key driver of deforestation, some thought has been given as to whether to expand REDD to include agriculture. Alternatively, some have proposed that a sectoral approach, similar to that of REDD, should be taken for agriculture.

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There are technical and methodological issues which still need to be sorted out with regard to REDD, and these would also apply to agriculture. These refer mainly to how to define a baseline or a reference scenario, how to treat leakages, permanence and additionality, and how to monitor and report emission reductions. Despite remaining uncertainties, due in part due to the natural flux of agricultural emissions, some experts argue that existing methodologies already allow the measurement, reporting and verification of agricultural emissions with uncertainties similar to other sectors.

#### **IV.A.3 Market Mechanisms**

The AWG-LCA is also to consider approaches to enhance the cost-effectiveness of mitigation actions, including market mechanisms. Agricultural measures may well be the most cost-effective mitigation measures, and arguably the greatest incentive for changing agricultural practices can be derived through market mechanisms. This, however, requires further agreement on whether the existing state of knowledge is sufficient or not. Moreover, developing country producers, and smallholders in particular, would require capacity building in order to benefit from such mechanisms.

### **IV.B Negotiations under the Kyoto Protocol**

The Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) is the group working on further commitments under the Kyoto Protocol. Discussions include the next round of commitments after 2012; analysis of tools/rules for developed countries to reach reduction targets and how to advance effectiveness of tools, i.e. market mechanisms.

#### **IV.B.1 Clean Development Mechanism**

The AWG-KP is also deliberating about a reform in the CDM. A number of parties argue that the existing operational rules impose inordinately high transaction costs on small projects including small farmers and foresters. Some are proposing to expand the CDM beyond a project basis. As mentioned, the CDM currently limits eligible activities in agriculture to reduction of non-CO<sub>2</sub> gases and afforestation and reforestation, with only one product having been undertaken in the latter category.

Several parties have proposed that carbon sequestration from avoided deforestation and agricultural soils should be considered eligible under the CDM, and that carbon credits under the CDM should not be temporary.

Other parties have made proposals for reforming the CDM that are related to the need to ensure environmental integrity and focus on action through projects that go beyond win-win and low-cost measures. Among the proposed reforms are crediting to take into account NAMAs (including action supported outside carbon markets) and sectoral crediting mechanisms that could provide a stepping stone towards cap-and-trade in developing countries.

## V. Which Way Forward?

### Adaptation

A Copenhagen Agreement should focus on urgent adaptation needs in the agricultural sector. It is crucial to undertake more country-specific research on the likely impacts of climate change on national agricultural production, and by extension the specific adaptation needs. As the UNFCCC Chair's text clearly states<sup>6</sup>, improving the resilience of agriculture to the impacts of climate change is a key priority for technology support for adaptation.

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The Copenhagen Agreement should highlight in particular the importance of funding for strengthening adaptive capacities in developing countries. Socio-economic and development co-benefits of adaptation commitments/measures should be emphasized and encouraged. As the FAO has pointed out, the agriculture sector offers high potential for synergies with climate change adaptation and key co-benefits of relevance to sustainable development.<sup>7</sup>

As the FAO has pointed out, the agriculture sector offers high potential for synergies with climate change adaptation and key co-benefits of relevance to sustainable development.

A strong emphasis on the importance of adaptation in the agricultural sectors in developing countries in a new international climate change regime should reinforce the recent recognition of the importance of the agricultural sector in both developing countries' policies and overseas development assistance. Policies targeted at improving agricultural productivity, rural physical and institutional infrastructure and poverty alleviation in rural areas contribute not only to food security and penury abatement but also usefully increase the resilience of the agricultural sector in the face of climate change.

### Mitigation

Agriculture provides an important and relatively cost-effective mitigation option, which must be more fully exploited. The Copenhagen Agreement should commit to including agriculture more fully in the international framework and encourage countries to do so in their national implementation thereof. If it is unrealistic to include agriculture in a detailed way in a Copenhagen Agreement (for technical or political reasons, or as a result of the negotiating calendar), a clear agricultural work program should be agreed on.

<sup>6</sup> Par.25 Fulfilment of the Bali Action Plan and components of the agreed outcome, Part II FCCC/AWGLCA/2009/4 (Part II), 17 March 2009

<sup>7</sup> Enabling Agriculture to Contribute to Climate Change Mitigation, A Submission by the Food and Agriculture Organization of the United Nations, <http://unfccc.int/resource/docs/2008/smsn/igo/036.pdf>

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A new climate change regime must more fully address the mitigation potential of developing country agricultural measures. The fragmented approach of the existing regime needs to be amended. REDD is an important step in changing this approach, but the Copenhagen Agreement also needs to signal the importance of the agricultural sector. It could do so by agreeing to expand REDD to include agriculture, since agriculture is one of the key drivers of deforestation. Alternatively, REDD and agriculture could become a terrestrial or land-use sector, or agriculture could become a stand-alone sector.

Developing countries should fully explore how agricultural measures can fit into their NAMAs. Financing and technology from Annex I countries will be crucial elements. More knowledge dissemination through extension services of changes in agricultural practices, which lead to emissions reductions and increased carbon sequestration above and below ground need to take place. In other words, even if it proves difficult to measure emissions reductions, developing countries should be encouraged to undertake well understood mitigation actions as part of their (non-quantifiable) commitments.

Ultimately, financial incentives will be most effective in triggering mitigation. Although fund-based financing is an important part of the climate change negotiations, it is also likely to be the most contentious. In the long run, market mechanisms must be engaged.

Measures to reduce agricultural emissions and to increase carbon sequestration should constitute NAMAs for developing countries, in particular since they meet Parties' expectations that NAMAs should contribute to the sustainable development and economic growth of developing countries, as well as to the global effort to mitigate climate change in accordance with countries' capabilities and national circumstances.

### **Financing and Technology**

Ultimately, financial incentives will be most effective in triggering mitigation. Although fund-based financing is an important part of the climate change negotiations, it is also likely to be the most contentious. In the long run, market mechanisms must be engaged.<sup>8</sup>

Greater consensus needs to be reached about whether existing methodologies to measure emissions reductions and removals, as laid out in the IPCC 2003 Good Practice Guide for LULUCF<sup>9</sup> and its 2006 Guidelines for National Greenhouse Gas Inventories, are sufficient to begin incorporating carbon sequestration on a larger scale in market mechanisms, and more effort needs to be made to ensure that developing country producers have the capacity

The situation in which developed country producers benefit disproportionately from market mechanisms because of a greater availability of technology and greater access to carbon markets, must be avoided, considering that the largest mitigation potential lies in developing countries.

<sup>8</sup> As explained, the CDM is the only market mechanism available for developing countries. There are also private sector carbon markets, which include agriculture, but these are not discussed in this paper.

<sup>9</sup> <http://www.ipcc-nggip.iges.or.jp/public/gpplulucf/gpplulucf.html>

to use these methodologies. Arguably, the very act of including such measures in compliance markets will trigger an improvement both in the methodologies themselves and countries' capacities to adopt them. Expanding the CDM to incorporate carbon sequestration might, therefore, be a good option for expanding the mitigation potential in this sector.

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## About the Platform

*In 2008 the International Food & Agricultural Trade Policy Council (IPC) and the International Centre for Trade and Sustainable Development (ICTSD) launched The ICTSD-IPC Platform on Climate Change, Agriculture and Trade: Promoting Policy Coherence. This interdisciplinary platform of climate change, agricultural and trade experts will promote increased policy coherence to ensure effective climate change mitigation and adaptation, food security and a more open and equitable global food system.*

## About the Organizations

*The International Food & Agricultural Trade Policy Council promotes a more open and equitable global food system by pursuing pragmatic trade and development policies in food and agriculture to meet the world's growing needs. IPC convenes influential policymakers, agribusiness executives, farm leaders, and academics from developed and developing countries to clarify complex issues, build consensus, and advocate policies to decision-makers. More information on the organization and its membership can be found on our website: [www.agritrade.org](http://www.agritrade.org).*

*The International Centre for Trade and Sustainable Development was established in Geneva in September 1996 to contribute to a better understanding of development and environment concerns in the context of international trade. As an independent non-profit and non-governmental organization, ICTSD engages a broad range of actors in ongoing dialogue about trade and sustainable development. With a wide network of governmental, non-governmental and inter-governmental partners, ICTSD plays a unique systemic role as a provider of original, non-partisan reporting and facilitation services at the intersection of international trade and sustainable development. More information is available at [www.ictsd.net](http://www.ictsd.net).*

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