



Biochar in the UNFCCC

Updated July 8, 2009

1) Biochar in the Copenhagen Framework Draft Negotiating Text

- a. **Copenhagen Protocol AWGLCA Negotiating Text** (6/5/09)
 - i. Text states that "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 in 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."
(<http://unfccc.int/resource/docs/2009/awglca6/eng/08.pdf> p. 36)

2) Countries' Submissions Which Have Included References to Biochar

- a. **Australia's Submission** (received May 2009) states that achieving its goals to reduce carbon emissions by 24 percent below 1990 levels by 2020 will require a comprehensive approach, including soil carbon initiatives, such as biochar.
(<http://unfccc.int/resource/docs/2009/awglca6/eng/misc04a03.pdf>, p. 3)
- b. **Micronesia's Submission** (received 4/24/09)
(<http://unfccc.int/resource/docs/2009/awglca6/eng/misc04p02.pdf>, p. 17) includes an annex, which describes short-term efforts, coupled with long-term efforts, to reduce GHG emissions that includes usage of biochar.
- c. **African Working Group (Gambia, Ghana, Lesotho, Mozambique, Niger, Senegal, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe) Ideas and Proposals on Paragraph 1 of the Bali Action Plan** (March 29-April 2009)
(http://unfccc.int/files/kyoto_protocol/application/pdf/swazilandonbehalf060209.pdf).
 - i. Submission explains linkage between land degradation and climate change
 - ii. Submission extols carbon mitigation potential of biochar and how biochar can promote sustainability by increasing oxidation, which improves long-term water retention capacity of soil, enabling it to sustain terrestrial vegetation.
- d. **Belize's Submission** (March 29-April 2009)
(<http://unfccc.int/resource/docs/2009/awglca5/eng/misc01.pdf>, pgs. 14-16)
 - i. States its support for biochar by citing its potential as a carbon sink and in mitigating significant GHG emissions.
 - ii. Further, submission states that biochar has other advantages relating to improved soil fertility and renewable energy production through pyrolysis.
 - iii. States need to establish proper global baseline for carbon sinks, including biochar.
- e. **Swaziland (on behalf of Gambia, Ghana, Lesotho, Mozambique, Niger, Senegal, Swaziland, Uganda, United Republic of Tanzania, Zambia, and Zimbabwe) Submission** (Received 2/6/09)
(<http://unfccc.int/resource/docs/2009/awglca5/eng/misc01.pdf>, pgs. 78-80)
 - i. Stresses the linkages between climate change and land degradation.
 - ii. Identifies carbon sinks, particularly with the usage of biochar, as an effective tool for reducing GHG emissions.

- f. **Micronesia Submission** (received 12/06/08) states its support for biochar as an immediate near-term potential for GHG mitigation, while also improving soil productivity and reducing the need for fossil-fuel based fertilizers.
(<http://unfccc.int/resource/docs/2008/awglca4/eng/misc05a02p02.pdf>, p. 38).

3) **Intergovernmental Parties' Submissions Which Have Included Biochar**

- a. **Submission by the United Nations Convention to Combat Desertification (UNCCD)** (March 29-April 8, 2009): UNCCD states its support for carbon in soils and biochar as an effective mitigation tool for carbon emissions and establishes short, medium, and long-term policy goals.
(<http://unfccc.int/resource/docs/2008/smsn/igo/033.pdf>)
- Short-Term Goals:** raise awareness of carbon in soil and biochar in advance of negotiations on Copenhagen agreement.
 - Medium to Long-term Goals:** determine how carbon in soil and biochar work within the current UNFCCC definitions for additionality, permanence, and leakage, among other definitions, and work toward the inclusion of soil and biochar in the UNFCCC-Copenhagen agreement
- b. **Submission by UNCCD** (December 1-10, 2008): UNCCD submitted a paper on biochar, expressing its support for using biochar to replenish carbon in soils, improve soil fertility, and sequester carbon dioxide. Specifically, UNCCD recommended (http://www.unccd.int/publicinfo/poznanclimatetalks/docs/Submission_by_UNCCD_to_AWG-LCA_on_Biochar.pdf):
- Raising awareness on the role of land on mitigation and adaptation to climate change. Particularly, UNCCD extolled the importance of biochar in enhancing the sequestration of carbon in the soils.
 - Inclusion of biochar in the CDM mechanism along with currently already included afforestation and reforestation (A/R).
 - Revision of the additionality rules in order to take into account the fact that biochar is a permanent means of carbon capture that has more value than the potentially reversible (A/R).
 - In view of item 3 above, increase the level of CERs that an annex I Party can use towards meeting the Kyoto Protocol targets from the current 1% to a higher percentage. This would result in large financial flows for both mitigation and adaptation to developing countries where use of this technique would result in the highest returns, due to the high losses of SOC.
- c. **United Nations Environmental Programme (UNEP) World Conservation Marketing Program (WCMP):** power point presentation by Barney Dickson, Head Climate Change and Biodiversity at UNEP, which mentioned the potential of climate change mitigation in drylands. Specifically, his presentation (<http://www.unccd.int/publicinfo/landday/docs/2Dickson.pdf>, p. 10)
- Noted potential for biochar
 - But, also noted need for more research in order to answer important economic and environmental feasibility questions.

4) **Countries' Submissions Which Have Included Favorable Mention of Potential of GHG Mitigation through Soil Practices**

- a. **Iceland's Submission** (received 12/05/08, p. 142) states its view that sinks, as well as sources, should be included in a climate mitigation regime, specifically because these types of efforts can not only mitigate GHG emissions but also promote biodiversity and sustainable development.
(<http://unfccc.int/resource/docs/2008/awglca4/eng/misc05a02p01.pdf>).
- b. **New Zealand's Submission** (received 9/30/08)
(<http://unfccc.int/resource/docs/2008/awglca4/eng/misc05.pdf>)

- i. States that current technology exists for GHG mitigation in the agriculture sector, but that technological development will be a key driver ensuring the efficacy of additional mitigation measures in the future.
- ii. Additionally, the submission states the deployment of new mitigation technologies for livestock systems and fertilizer applications to prevent increases in agriculture GHG emissions by 2030.
- c. **Uruguay's Submission** (received 8/18/08, p. 62) present its national experience in developing national specific emissions factors for methane from enteric fermentation and nitrous oxide from agriculture soils. (<http://unfccc.int/resource/docs/2008/awglca3/eng/misc02.pdf>).
- d. **Canada's Submission** (received 03/18/08) supports a more comprehensive treatment of agriculture, including recognizing mitigation practices in the agriculture sector, which offer considerable mitigation potential. (<http://unfccc.int/resource/docs/2008/awglca1/eng/misc01a02.pdf>)

5) **UNFCCC Workshop on Agriculture (April 4, 2009)**

- a. Countries whose submissions or comments included support for biochar
 - i. **Senegal**: mentions the potential of biochar as a process for mitigating carbon dioxide emissions. (http://unfccc.int/files/meetings/ad_hoc_working_groups/lca/application/pdf/12_senegal.pdf, p. 5)
- b. Intergovernmental Parties whose submissions or comments included favorable mention of potential of GHG Mitigation through soil practices
 - i. **UNFCCC Secretariat**: presentation talked about the significant GHG mitigation opportunities for GHG emissions and mentioned synergetic effects of climate change mitigation approaches in agriculture, including greater food safety, improvement of food quality and alleviating poverty. (http://unfccc.int/files/meetings/ad_hoc_working_groups/lca/application/pdf/1_unfccc.pdf)
 - ii. **IPCC Submission**: stated potential of carbon sequestration in soils and specifically stated that it has potential of sequestering 1-4 billion tons of carbon dioxide annually. (http://unfccc.int/files/meetings/ad_hoc_working_groups/lca/application/pdf/2_ipcc_new.pdf)

6) **Intergovernmental Parties Submissions Which Have Included Favorable Mention of Potential of GHG Mitigation through Soil Practices**

- a. UNFCCC Agriculture Workshop Summary (04/07/09): the Chair of the Agriculture Workshop provided a summary stressing the importance of agriculture for both developing and developed countries in mitigating GHG emissions. (<http://unfccc.int/resource/docs/2009/awglca5/eng/crp02.pdf>). Excerpts include
 - i. "Agriculture also has considerable technical mitigation potential (depending on national and regional circumstances), mostly in sequestration of carbon in agricultural soils, followed by methane and nitrous oxide reductions resulting mainly from livestock and rice cultivation."
 - ii. "On the subject of opportunities, it was mentioned that many mitigation options can be realized at low or even negative cost, resulting in win-win situations. For example co-benefits may include increasing food security and productivity or enhancing climate change resilience."
 - iii. "Several Parties stressed the importance of including agriculture in the mitigation actions to be enhanced by an agreed outcome in Copenhagen."
- b. **Food and Agriculture Organization of the United Nations** (04/29/09): stated that the use of soil carbon sequestration is a scientifically valid and previously recognized mitigation technology which should be further adopted and enabled in the post-2012 process. (<http://unfccc.int/resource/docs/2009/smsn/igo/043.pdf>)

7) **Additional UNFCCC Documents Mentioning Biochar**

- a. ***UNFCC-UNDP's Handbook for Conducting Technology Needs Assessments for Climate Change*** (June 2009 – advance document). This document identifies biochar as technology that can be employed on both as small and large-scale with potential for carbon mitigation in the medium term. (<http://unfccc.int/tclear/pdf/TNA%20Handbook%20%20Advance%20Document%20June09.pdf>, p.128)
- b. ***Address by Yvo de Boer at Informal Ministerial Consultations held by the President of COP 14*** (6/5/09)
(http://unfccc.int/files/press/interviews_and_statements/application/pdf/090514_speech_csdhls.pdf)
 - i. Stated that agricultural mitigation and adaptation with regard to carbon emissions can successfully go hand-in-hand.
 - ii. Noted that a “successful outcome” in Copenhagen will include incentives for the agricultural sector to adopt “decisive” mitigation measures.
- c. ***Address by Yvo de Boer at UNCCD Land Day*** (6/6/09): reiterated similar points as in his May 14 speech
(http://unfccc.int/files/press/news_room/statements/application/pdf/090606_speech_bonn.pdf)