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UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

Subsidiary Body for Scientific and Technological Advice

Thirty-eighth session

Bonn, 3–14 June 2013

Item X of the provisional agenda

Views on the content of the workshop on technical and scientific aspects of ecosystems with high-carbon reservoirs not covered by other agenda items under the Convention

Submissions from Parties

1. The Subsidiary Body for Scientific and Technological Advice (SBSTA), at its thirty-seventh session, requested the secretariat to organize a workshop, subject to the availability of financial resources, to be held by SBSTA 39, to consider information on the technical and scientific aspects of ecosystems with high-carbon reservoirs not covered by other agenda items under the Convention, such as coastal marine ecosystems, in the context of wider mitigation and adaptation efforts.¹
2. To this end, the SBSTA invited Parties to submit to the secretariat, by 25 March 2013, their views on the content of that workshop and requested the secretariat to compile these submissions into a miscellaneous document.²
3. The secretariat has received five such submissions. In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced* in the language in which they were received and without formal editing.³

¹ FCCC/SBSTA/2012/5, paragraph 50.

² FCCC/SBSTA/2012/5, paragraph 51.

* These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

³ Also available at <<http://unfccc.int/5901.php>>.

FCCC/SBSTA/2013/MISC.6

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Submission under FCCC/SBSTA/2012/L.25, paragraph 16 | March 2013

Views from Parties on the content of the workshop on technical and scientific aspects of ecosystems with high-carbon reservoirs not covered by other agenda items under the Convention, such as coastal marine ecosystems, in the context of wider mitigation and adaptation efforts | SBSTA

Australia notes the proposal for a workshop on technical and scientific aspects of ecosystems with high-carbon reservoirs not covered by other agenda items under the Convention, such as coastal marine ecosystems, in the context of wider mitigation and adaptation efforts, and welcomes the opportunity to submit its views on this matter as requested under FCCC/SBSTA/2012/L.25, paragraph 16.

Australia would like to draw attention to the existing work of the Intergovernmental Panel on Climate Change (IPCC) in the *2013 Supplement to 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*. This Supplement provides additional guidance, among other matters, on coastal wetlands including mangroves, salt marsh, seagrass and tidal freshwater systems.

Australia notes that future inventory submissions will be governed by the IPCC guidance as agreed and adopted by Parties, and that the *Wetlands Supplement* is currently in the process of Government review, and is due to be adopted by the IPCC in October 2013.

To ensure efficient use of resources, Australia is of the view that the workshop should be held pre-sessionally, in association with a session of the SBSTA (preferably a session where research will be the focus under the Research and Systematic Observations agenda item), in order to minimise the cost of attendance for most Parties.

Paper no. 2: Bangladesh, Cameroon, Congo, Costa Rica, Côte d'Ivoire, Democratic Republic of the Congo, Dominica, Dominican Republic, Fiji, Gabon, Guyana, Honduras, Kenya, Nigeria, Papua New Guinea and Uganda

Submission of Views by

Bangladesh, Cameroon, Costa Rica, Cote d'Ivoire, Democratic Republic of Congo, Dominica, Dominican Republic, Fiji, Gabon, Guyana, Honduras, Kenya, Nigeria, Papua New Guinea, Republic of Congo, and Uganda

on

Coastal marine ecosystems under Research and Systematic Observation

25 March 2013

Draft

1. The SBSTA at its 37th session invited Parties to submit, by 25 March 2013, their views on:
 - possible items for consideration as part of the research dialogue during SBSTA 38⁴;
 - (see Decision)
 - the content of the workshop on technical and scientific aspects of ecosystems with high-carbon reservoirs not covered by other agenda items under the Convention, such as coastal marine ecosystems, in the context of wider mitigation and adaptation efforts⁵.

2. For this purpose the Coalition for Rainforest Nations considered issues related to the above and drafted this submission of views. This submission has been prepared to reflect those discussions and views from many other developing country Parties on ways to enhance the research dialogue with the aim to provide opportunities for engaging with the coastal marine scientific community to present ongoing scientific findings relevant to the needs of the Convention in particular for conservation and enhancement of coastal marine ecosystems sinks and reservoirs as well.

3. The submission of views to SBSTA35 made on 19 September 2011 by *Belize, Cameroon, Central African Republic, Costa Rica, Cote d'Ivoire, Democratic Republic of Congo, Dominican Republic, Ecuador, Gabon, Ghana, Guatemala, Guyana, Honduras, Kenya, Panama, Papua New Guinea, Republic of Congo, Solomon Islands, Togo, and Uganda* on views on the research dialogue, including ongoing activities, associated modalities and ways to enhance the dialogue on Coastal Marine Ecosystems included in document FCCC/SBSTA/2011/MISC.8/Add.1 should be recalled.

⁴ FCCC/SBSTA/2012/L.25, paragraph 13.

⁵ FCCC/SBSTA/2012/L.25, paragraph 16.

4. The submission of views to SBSTA36 made on 29 February 2012 by Bangladesh, Cameroon, Central African Republic, Congo (Republic), Costa Rica, Cote d'Ivoire, Democratic Republic of Congo, Dominica, Dominican Republic, Fiji, Gabon, Ghana, Guyana, Honduras, Kenya, Pakistan, Panama, Papua New Guinea, Sierra Leone, Solomon Islands, Suriname and Uganda on the research dialogue, including ongoing activities, associated modalities and ways to enhance the dialogue on Coastal Marine Ecosystems included in document FCCC/SBSTA/2012/MISC.2/Add.1 should be recalled.

Background

5. Status of research and science on coastal marine ecosystems (CME):

Recent research has made great inroads into describing the valuable role that coastal and marine ecosystems (CMEs) play in sequestering carbon dioxide (CO₂) and storing vast amounts of carbon. The carbon stocks and emissions of these ecosystems are also commonly referred to as "Blue Carbon". Relatively unappreciated, however, is that conversion of these coastal ecosystems also impacts the very large pools of previously-sequestered carbon. Residing mostly in soils, this "blue carbon" can be released to the atmosphere when these ecosystems are converted or degraded. Despite the value of mangrove forests, seagrass beds, and salt marshes in sequestering C, and the other goods and services they provide, these systems are being lost at critical rates and action is urgently needed to prevent further degradation and loss. Recent assessments suggest that about one-third CMEs have already been lost over the past decades as a result of reclamation, deforestation, coastal development, and transformation to aquaculture or agriculture. Combining the best available data on global area, land-use conversion rates, and near-surface carbon stocks in each of the three ecosystems, using an uncertainty-propagation approach, recent studies have estimated that 0.15 - 1.02 Pg (billion tons) of carbon dioxide are being released annually, several times higher than previous estimates that only accounted for lost sequestration. These emissions are equivalent to 3 - 19% of those from deforestation globally, and result in economic damages of \$US 6 - 42 billion annually. The largest sources of uncertainty in these estimates stems from limited certitude in global area cover and rates of land-use conversion. Additional research is also needed on the fate of ecosystem carbon upon conversion. Recognition of the C sequestration and storage value of coastal and marine ecosystems provides a strong argument for their protection and restoration; however for this to occur, it is necessary to disseminate the scientific progress to policy and decision makers in order to allow opportunities to address this emission source.

6. Status of discussions on coastal marine ecosystems in the UNFCCC:

The Coalition for Rainforest Nations (CfRN) introduced the issue of Coastal Marine Ecosystems and their contribution to mitigation of climate change in 2011, within the agenda item Research and Systematic Observation, at the 34th Session of the Subsidiary Body on Scientific and Technological Advice (SBSTA). Over the ensuing six months, CfRN argued and convinced Parties that because of their carbon sequestration capacity, coastal marine ecosystems deserved more rigorous scientific examination and future policy review within the UNFCCC.

In Durban, SBSTA 35, much progress was made. Parties agreed to devote a dedicated amount of time to begin focused and concrete discussions on CME at SBSTA 36 in June 2012. SBSTA 35 conclusion on Research and Systematic Observation invites scientists and others to provide data to quantify the human impact on these ecosystems. Parties also discussed staging a workshop on the matter in the latter half of 2012.

At SBSTA 36 CfrN entered the negotiations on CME with the objective of finalizing an international technical workshop which would declare the maturity of the issue from a scientific point of view and the need to start shifting discussions toward policy issues. Parties eventually agreed to a draft decision, completely bracketed, and to discuss the future organization of a workshop. The presentation by CfrN's expert Dr. Boone Kauffman at a scientific workshop held during SBSTA 36 was very well received. The unfinished business of SBSTA36 was attended to by SBSTA 37 where CfrN was instrumental in mobilizing support for the issue of CME. In Doha, Parties agreed to request the SBSTA to organize a workshop on CME to be held before SBSTA 39, as a fundamental step to advance the discussion about CME.

Furthermore, the IPCC Task Force on National Greenhouse Gas Inventories (TFI) is currently developing additional national-level inventory methodological guidance on wetlands, including default emission factor values, with the aim to fill gaps in the coverage of wetlands and organic soils in the 2006 IPCC Guidelines. This effort will be published as The 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands. This document, which includes one chapter on coastal wetlands (Chapter 4) and others of direct relevance, is expected to be adopted in October 2013.

CME for consideration as part of the research dialogue during SBSTA 38

Given the significant role of CME in adaptation and mitigation, the significant carbon stocks and numerous co-benefits, the upcoming research dialogue meeting to be held in conjunction with the thirty-eighth session of the SBSTA, should allocate sufficient time to discuss the technical and scientific aspects of emissions by sources, removals by sinks, and reservoirs of all greenhouse gases, from coastal and marine ecosystems such as mangroves, tidal salt marshes, and seagrass meadows, with a view to identifying and quantifying the impact of human activities.

Objective of the workshop

7. Scientific and technical considerations

Currently, carbon emissions from the conversion of coastal ecosystems are not fully included in emissions accounting or carbon market perspectives, but recent studies suggests they may be disproportionately important to both. The science describing the unequivocal importance of these ecosystems is now at a mature enough stage to warrant a workshop for policy and decision makers and to start assessing the potential contribution of coastal and marine carbon mitigation efforts to the global emission reduction targets as well as to the related co-benefits in terms of adaptation, building resilience and creating new socio-economic opportunities for local communities. The objective of the workshop will be to provide opportunities for Parties to engage with the coastal marine scientific community who will be presenting ongoing scientific findings relevant to the needs of the Convention; in particular for conservation and enhancement of coastal marine ecosystems sinks and reservoirs. Participants will be provided with a platform to discuss the role of Coastal Marine Ecosystems as greenhouse gas sources and sinks, and the potential strategies for their inclusion in mitigation and adaptation approaches, if appropriate.

8. Input to policy

The workshop should catalyze improved knowledge and acceptance of existing scientific findings while facilitating improved policy approaches. The workshop should highlight the relevance and potential of CME with respect to mitigation and adaptation to climate change. The workshop should serve to stimulate

technical and scientific considerations around CME with the view to enhance the ongoing policy discussion on incentive mechanisms supporting management of CME-

Contents and structure of the workshop

9. Time, duration and organization of the workshop: the workshop should last 2 days and be based on a series of presentations, general and concurrent breakout discussions and conclusions. Indicatively, the workshop should take place on [XX], in Honduras.

10. Workshop sessions (based on the agenda): the workshop should open with a session on the scientific update and status on coastal marine ecosystems and Stocktaking on the most recent IPCC developments on it. The second and third sessions should cover respectively issues around descriptions, ecology and values of CME and values, threats, and state of our knowledge of CME in the world, considering representation from different regions of the world. The workshop will be then divided into breakout sessions focusing on mitigation and adaptation strategies, MRV, compliance and voluntary market and regionally need assessments. The final part of the workshop will focus on recommendations to SBSTA, input to the IPCC and other policy-related actions and activities. The implications for National Communications and needs for additional capacity building should also be addressed.

Results of the workshop and follow-up

11. Input to the IPCC:

The IPCC is currently calling for expert review of the '2013 Supplement to 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands', which contains a chapter on coastal wetlands. At the workshop Parties should further identify activities that the IPCC can undertake to adequately include CMEs into IPCC reviews and subsequent accounting practices.

The science related to quantifying values of CME (also commonly referred to as Blue Carbon) for climate change mitigation and adaptation is evolving and progressing at a rapid rate. Further, investigations on GHG emissions arising from land cover change in these ecosystems are underway. Ongoing studies on every continent should be highlighted at this workshop given that new information may come to light. This new science will be of great value to the IPCC as they integrate the CMEs into other climate change mitigation and adaptation programs.

12. Recommendations to SBSTA

While underfunded, there is a dedicated body of scientists focusing on the interactions of CME and climate change. The largest sources of uncertainty in estimates of the roles of CME in global carbon cycles stems from limited certitude in global area coverage and rates of land-use conversion, but additional research is also needed on the fate of ecosystem carbon upon conversion. Although the relevant science supporting the initial estimates of C sequestration and emissions from CMEs will be refined in the coming years, it is clear that policies encouraging the sustainable management of coastal ecosystems could significantly reduce carbon emissions from the land-use sector, in addition to sustaining the well-recognized ecosystem services and other socio-economic and environmental co-benefits of coastal habitats.

On the basis of the technical and scientific analysis emerged from the workshop and ongoing policy makers should be invited to determine how to further design and implement mechanisms that will deliver verifiable and additional reductions of greenhouse gas emissions. The SBSTA should therefore recognize the role and the significance of CME and dedicate further work on:

- Establishing comprehensive global and national approaches to coastal and marine natural carbon management for climate change mitigation including all relevant natural systems
- Provide a scientific knowledge base and technical methods

13. Roadmap to define next steps for CME in the UNFCCC process until 2015

Policy advocacy and implementation should move respectively to the ADP and SBI when appropriate. The goal is to ensure that coastal marine ecosystems activities are further incorporated into the policy and financing process of the UNFCCC. To this aim a phased approach should be applied so that developing countries may develop demonstration projects opened to public sources. To encourage implementation of coastal ecosystem conservation, sustainable use and restoration activities as a mechanism for climate change mitigation, the workshop will explore the details of how CME activities could be included in the nationally appropriate mitigation actions (NAMAs) of developing countries seeking international support or as part of current REDD efforts according to national legal frameworks and conditions. In this regard, we need to take on board and elaborate on the role of CME mitigation potential in the new legally binding framework to be finalized by 2015.

Annex

Workshop on Coastal Marine Ecosystems 2013 Honduras, 2 days

Draft agenda

Welcome – Country Host Leadership

Opening Science Address: The scientific basis/rationale for inclusion of Coastal Marine Ecosystems in mitigation and adaptation strategies

Science of Coastal Marine Ecosystems

Overview: Ecosystem Services of Coastal Marine Ecosystems

Descriptions, Ecology and Ecosystem Service Values (including Carbon) of Coastal Marine Ecosystems.

- Seagrass
- Marshes
- Mangroves
- Comparisons, similarities and differences of Coastal Marine ecosystems and fresh wetlands

IPCC update on the wetland revision with emphasis on the chapter on Coastal Marine Ecosystems (IPCC)

Economic values of Coastal Marine Ecosystems

Coastal Marine Ecosystems of the World: Values, Threats, and state of our knowledge

Coastal Marine Ecosystems – Africa

Coastal Marine Ecosystems – Asia/Australia

Coastal Marine Ecosystems – South America Latin America Coastal Marine Ecosystems – North America/Europe

Climate change Mitigation and Coastal Marine Ecosystems - opportunities within the UNFCCC

Breakout Sessions/Open Discussions:

Coastal Marine Ecosystems and:

- Mitigation Strategies
- Adaptation strategies
- Monitoring, Reporting and verification
 - o Remote sensing strategies
 - o Ground based inventories
- Compliance markets
- Regional Need Assessments (per region): Latin America, Asia, Africa, Europe/North America

Final Discussion on next steps

- Recommendations to SBSTA/COP
- Input to the IPCC
- Other policy-related actions and activities

Japan's submission regarding its views on the content of the workshop

Japan welcomes the opportunity to submit the following information on the content of the workshop⁶ as requested in paragraphs 15 and 16 of the conclusion reached at SBSTA 37 (FCCC/SBSTA/2012/L.25):

- Japan's satellites acquire and accumulate information on technical and scientific aspects of ecosystems with high-carbon reservoirs, such as coastal marine ecosystems. For example, the Global Change Observation Mission – Climate (GCOM-C) satellite scheduled for launch in 2015 is particularly useful for coastal observations as it provides information on oceanic carbon fixation rates by observing phytoplankton distribution and environmental conditions such as sea surface temperature and solar radiation. The satellite is also equipped with higher spatial resolution compared to those of existing global observation instruments of its kind. The Greenhouse-gases Observing Satellite (GOSAT) also collects information on high-carbon reservoirs that contribute to grasping the carbon cycle (mainly for terrestrial rather than marine ecosystems) through space-based observation. By way of example, its chlorophyll fluorescence measurements are expected to contribute to the estimation of biomass quantities and they might also contribute to the estimation of land-related carbon fixation.
- In Japan, inter-tidal flats and seaweed beds are restored and created using dredged materials to improve port and coastal environments. In relation to such activities, the Port and Airport Research Institute (PARI) is currently collaborating with other research institutions, through fieldwork, laboratory experiments and data analysis to clarify the mechanism behind carbon dioxide capture and storage, develop measurement technology and investigate key environmental drivers controlling the rate of carbon dioxide capture and storage.

⁶ The workshop will be organized to consider information on the technical and scientific aspects of ecosystems with high-carbon reservoirs not covered by other agenda items under the Convention, such as coastal marine ecosystems, in the context of wider mitigation and adaptation efforts.

Submission by South Africa

Views from Parties on content of the workshop on technical and scientific aspects of ecosystems with high-carbon reservoirs not covered by other agenda items under the Convention, such as coastal marine ecosystems, in the context of wider mitigation and adaptation

25 March 2013

South Africa welcomes the opportunity to explore the topic of high-carbon reservoirs in ecosystems in general, especially because of the potential implications of ongoing climate change for ecosystems, and because of the vital role that such reservoirs already play in sequestering human carbon emissions. We believe that there is significant and urgent work necessary to quantify with more precision the location, activity and interannual variability in these carbon stocks and their fluxes.

With this in mind, we suggest that the topics or themes for the envisaged workshop should include the following

- A review of current knowledge on the relative size, flux activity and vulnerability of terrestrial and marine coastal carbon stocks to on-going climate change and the impacts of other human socio-economic activities
- The implications of coastal storms, sea level fluctuation, sea surface temperature change and floods for vulnerable coastal carbon stocks and how adaptation efforts that reduce risk to coastal communities can help to secure and enhance such carbon stocks.
- High carbon reservoirs, ocean acidification, impacts and response measures including ecosystem based adaptation strategies

Paper no. 5: United States of America

Submission by the United States of America

Content of the SBSTA Workshop for the Research and Systematic Observation Agenda Item

26 March 2013

The United States welcomes the opportunity to present our views on the content of the Subsidiary Body for Scientific and Technological Advice (SBSTA) workshop on the technical and scientific aspects of ecosystems with high-carbon reservoirs not covered by other agenda items under the Convention, such as coastal marine ecosystems, in the context of wider mitigation and adaptation efforts.

Coastal ecosystems, in particular tidal marshes, mangroves, and seagrass meadows, sequester and store substantial amounts of carbon, often referred to as “coastal blue carbon.” These ecosystems are important for the many ecosystem services they provide, including their roles in carbon sequestration and storage. Effective ecosystem-based management and restoration of these coastal marine ecosystems can support and enhance their ability to serve as long-term carbon sinks for climate change mitigation purposes, and minimize conversion or degradation that contributes to carbon emissions. The United States believes additional research, monitoring, and assessment of coastal blue carbon ecosystems could be beneficial.

The United States sees the upcoming SBSTA workshop as an opportunity to gain a collective understanding of the importance of coastal blue carbon ecosystems and the current state of the science regarding their carbon storage and sequestration potential. It would be valuable to have presenters address the following questions during the workshop:

Understanding the Benefits of Blue Carbon Ecosystems

- How do carbon storage and sequestration in coastal ecosystems result in value to humans?
- What do we know scientifically about the ability of tidal marshes, mangroves, and seagrass meadows to store and sequester carbon?
- What are the potential carbon benefits of conserving and restoring these ecosystems, and how do they compare to other high-carbon ecosystems?
- What adaptation co-benefits do these ecosystems provide?
- What baseline information, metrics, and tools exist to measure and monitor carbon storage and sequestration potential in these ecosystems?

Status of Blue Carbon Ecosystems

- Where precisely are these ecosystems located, and what is their global extent?
- What is the current status of these ecosystems (health and rates of loss), and what is predicted to happen to them under different development and climate scenarios?
- How do changes in these ecosystems affect their carbon sequestration and storage potential?

Blue Carbon Challenges and Opportunities

- What are key research and technical challenges and uncertainties that limit our understanding of these systems and their carbon services?
- What key scientific and socio-economic research and technical issues do we need to address to enhance our ability to manage these systems for carbon sequestration and storage?

It would be valuable to have presenters share relevant scientific and technical work taking place around the world and to share information about our blue carbon research and monitoring efforts.