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# BLUE CARBON POLICY FRAMEWORK

Based on the first workshop of the International Blue Carbon  
Policy Working Group

Dorothee Herr and Emily Pidgeon



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# 1. Introduction



Many natural environments contain large stores of carbon laid down by vegetation and other natural processes over centuries. If these ecosystems are degraded or damaged by human activities, emissions of carbon dioxide (CO<sub>2</sub>) contribute to anthropogenic climate change.

Conserving and restoring terrestrial forests, and more recently peatlands, has been recognized as an important component of climate change mitigation. Several countries are developing policies and programs in support of sustainable development through initiatives that reduce the carbon footprint associated with the growth of their economies, taking action to conserve and sustainably manage natural systems, particularly through activities linked to the United Nations Framework Convention on Climate Change (UNFCCC) and the REDD+<sup>1</sup> mechanism.

These approaches should now be broadened to manage other natural systems that contain rich carbon reservoirs and show potential significant emissions due to conversion and degradation. In particular, the coastal ecosystems of tidal marshes, mangroves and seagrasses sequester and store large quantities of Blue Carbon in both the plants and in the sediment below them. These Blue Carbon ecosystems are being degraded and destroyed at a rapid pace along the world's coastlines, resulting in globally significant emissions of carbon dioxide into the atmosphere and ocean and contributing to climate change.<sup>2</sup>

There is growing evidence and consensus that the management of coastal Blue Carbon ecosystems, through conservation, to avoid loss and degradation, restoration and sustainable use has strong potential to be a transformational tool in effective global natural carbon management.<sup>3</sup> Scientific understanding of carbon sequestration and potential emissions from coastal ecosystems is now sufficient to develop effective carbon management, policy, and conservation incentives for coastal Blue Carbon. With appropriate and timely action, increased recognition of the importance of coastal Blue Carbon systems

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1 Reduced Emissions from Deforestation and forest Degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries

2 Crooks, S. et al. 2011 Mitigating Climate Change through Restoration and Management of Coastal Wetlands and Near-shore marine Ecosystems. Challenges and Opportunities. Environment Department Paper 121, World Bank, Washington, DC, USA.

Donato, D.C. et al. 2011. Mangroves among the most carbon-rich forests in the tropics. *Nature Geoscience* vol. 4, pp. 293–297.

Mcleod, E. et al. 2011. A blueprint for Blue Carbon: toward an improved understanding of the role of vegetated coastal habitats in sequestering CO<sub>2</sub>. The Ecological Society of America. DOI:10.1890/110004.

3 Climate Focus. 2011. Blue Carbon Policy Options Assessment. Washington, DC, USA.

Murray, B.C. et al. 2011. Green Payments for Blue Carbon. Economic Incentives for Protecting Threatened Coastal Habitats. Nicholas Institute, Duke University.

will leverage improved management and regulation of coastal areas and provide a basis for incentives, including financial mechanisms, to conserve or restore these systems and avoid and manage emissions as well as impacts, i.e. support mitigation and adaptation to climate change.

In addition to their role and value as a global carbon store, coastal ecosystems provide significant other benefits for climate change adaptation, local livelihoods, tourism and culture such as protection from storms and prevention of shoreline erosion, regulation of coastal water quality, habitat for important fish species and other important and vulnerable species.<sup>4</sup>

Development and implementation of Blue Carbon-based activities now requires strategic policy and incentive mechanisms for coastal conservation, restoration and sustainable use, and and disincentives to drain or damage coastal systems. Currently no broad, strategic program exists to achieve this. To address this, a Blue Carbon Policy Framework has been developed, detailing a coordinated program of policy objectives and activities, needed for the integration of Blue Carbon into existing initiatives and to support the implementation of coastal management activities. The framework, described in this document, also sets forth a timeline and identifies the possible stakeholders to further develop the activities.



4 Barbier, E. B. et al. 2011. The value of estuarine and coastal ecosystem services. *Ecological Monographs*, 81(2) 169-193.

## 2. Background



The Blue Carbon Policy Framework provides the basis for a coordinated program to support the development and implementation of strategic policy and incentive mechanisms for conservation, restoration and sustainable use of coastal Blue Carbon ecosystems. The framework is designed to:

1. Define activities and a timeline to increase policy development, coastal planning and management activities that support and promote avoided degradation, conservation, restoration and sustainable use of coastal Blue Carbon systems;
2. Define actions and a timeline to develop and implement financial and other incentives for climate change mitigation through conservation, restoration and sustainable use of coastal Blue Carbon;
3. Identify key stakeholders, partners and Blue Carbon champions to implement the identified policy actions and define materials and products needed to support such activities;
4. Identify opportunities, limits and risks of advancing Blue Carbon in different international climate, coastal and ocean policy fora;

The framework is intended to guide and coordinate the activities of Blue Carbon stakeholders including NGOs, government, private sector and research institutions from the marine and the climate change communities. Not all activities are intended for all Blue Carbon stakeholders. Rather, the framework identifies different activities for different stakeholders.

The framework will be updated as needed by the International Blue Carbon Policy Working Group in coordination with the broader group of interested stakeholders.

### 3. International Blue Carbon Policy Working Group

The framework is the product of the first workshop of the International Blue Carbon Policy Working Group (the Policy Working Group) held from 12-14 July at Conservation International's headquarters in Arlington, VA. The Policy Working Group was formed in July 2011 to develop policy options for implementation (at international and national levels) for coastal Blue Carbon-based incentives (including financial) and management. The specific goals of the Policy Working Group are to:

1. Develop a strategic framework outlining key policy, program activities and financing opportunities needed to support climate change mitigation through coastal carbon management including ecosystem conservation, restoration and sustainable use; and
2. Build an integrated Blue Carbon community supporting the implementation of the Blue Carbon Policy Framework that will include climate, coastal and marine stakeholders.

To achieve these goals, the objectives of the Policy Working Group are to:

1. Identify and describe the climate, coastal and ocean policy issues and opportunities that need to be addressed to advance the conservation, restoration and sustainable use of coastal Blue Carbon ecosystems and evaluate the applicability and specific relevance of the range of existing, and potentially new, policy approaches (including climate, coastal and ocean), and financing mechanisms as tools for supporting coastal Blue Carbon conservation, restoration and sustainable use.
2. Building upon the outputs from objective 1, create a Blue Carbon Policy Framework and timeline detailing the needed policy actions required to:
  - a. Increase policy development, coastal planning and management activities that support and promote conservation, restoration and sustainable use of coastal Blue Carbon; and
  - b. Develop and implement financial incentives and technical support for climate change mitigation through conservation, restoration and sustainable use of coastal Blue Carbon.
3. Support the highest priority activities identified in the Blue Carbon Policy Framework either directly or through partners.
4. Identify additional policy and economic analysis needed for implementation of the Blue Carbon Policy Framework and the best partners to undertake the most immediate research priorities.

The policy working group consists of experts in coastal science, environmental policy and economics, and project implementation from within the climate change and marine communities. Representatives from the following organizations and institutions were present at the Washington, DC meeting: IUCN, CI, UNESCO-IOC, UNEP, World Bank, VCS, Climate Focus, Sylvestrum, ESA-PWA, Restore Americas Estuaries, EDF, MARES/Forest Trend, Wetlands International, Nicholas Institute - Duke University, Oregon State University, Ramsar Secretariat, CBD Secretariat, Coalition of Rainforest Nations, NOAA, U.S. Department of State, Ministry of the Environment Ecuador, Agency for Marine and Fisheries Research and Development Indonesia. The workshop was convened by International Union for Conservation of Nature (IUCN) and Conservation International (CI). Funding for the workshop has been provided by the Linden Trust for Conservation. Additional workshops will be held during 2011.

This Policy Working Group is informed by and complementary to the work of the Blue Carbon International Scientific Working Group (the Scientific Working Group) of CI, IUCN and the Intergovernmental Oceanographic Commission (IOC) of the UN Educational, Scientific and Cultural Organization (UNESCO). The Scientific Working Group was initiated to: determine the role of coastal vegetated ecosystems, such as mangroves, seagrasses, and salt marshes, in carbon storage and sequestration; develop accounting methodologies and standards to encourage the inclusion of these systems in national carbon accounting; and identify critical scientific information needs and data gaps.<sup>5</sup>

<sup>5</sup> The Blue Carbon Initiative is the first integrated program focused on mitigating climate change by conserving and restoring coastal marine ecosystems globally. The initiative is lead by Conservation International (CI), the International Union for Conservation of Nature (IUCN), and the Intergovernmental Oceanic Commission (IOC) of UNESCO, working with partners from national governments, research institutions, NGOs, coastal communities, intergovernmental and international bodies and other relevant stakeholders.

## 4. Terminology

Blue Carbon is the carbon stored, sequestered and released from coastal ecosystems including tidal marshes, mangroves and seagrass meadows. Blue Carbon in this report and context does not include carbon stored, sequestered and released by the open ocean and closely related ecosystems and organisms.

Blue Carbon activities refer to a suite of sustainable management activities in coastal ecosystems through conservation, resulting in avoided emissions from conversion and degradation and in the enhancement of removals through sustainable use and restoration.

This framework, for the exclusive purpose of easy identification and conceptualization, uses the term Blue Carbon. However, use of this terminology does not imply an intent to create new or separate policy or financing schemes. **Rather, the framework is designed to allow for smooth inclusion of Blue Carbon activities into existing international policy and financing processes whenever possible, broadening the definitions and terminologies as appropriate and necessary.**



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## 5. Blue Carbon Policy Framework Objectives



The importance of coastal carbon management for climate change mitigation is not yet fully recognized by international and national climate change response strategies. Climate change financing opportunities are currently untapped for supporting activities towards conservation, to avoid loss and degradation, restoration and sustainable use.

Therefore the UNFCCC is the primary targeted international policy fora, with other international policy fora such as the Convention on Biological Diversity (CBD) as supporting venues (see 5.4). Carbon financing (via the UNFCCC or the voluntary carbon market) are the primary targeted financial avenues for supporting national and project-level Blue Carbon activities with other avenues such as adaptation, biodiversity and conservation funding activities as complementary avenues.

The Blue Carbon Policy Framework has five specific Policy Objectives:

1. Integrate Blue Carbon activities fully into the international policy and financing processes of the UNFCCC as part of mechanisms for climate change mitigation
2. Integrate Blue Carbon activities fully into other carbon finance mechanisms such as the voluntary carbon market as a mechanism for climate change mitigation
3. Develop a network of Blue Carbon demonstration projects
4. Integrate Blue Carbon activities into other international, regional and national frameworks and policies, including coastal and marine frameworks and policies
5. Facilitate the inclusion of the carbon value of coastal ecosystems in the accounting of ecosystem services

Coordination between activities and stakeholders is needed to ensure maximum efficiency and effectiveness of actions directed at increasing Blue Carbon activities for climate change mitigation. In the short-term the Policy Working Group can provide coordination and prioritization of international policy efforts to ensure limited financial resources and technical expertise produce the maximum impact from implementation initiatives. In the medium to longer-term, it is anticipated that integration of Blue Carbon policy into existing coordination efforts and mechanisms, e.g. between international agreements, natural carbon mitigation approaches and marine management will be identified and used.

The following sections describe activities and timelines to achieve these objectives in more detail.

## 6. Blue Carbon Policy Framework

### **Summary**

#### **Integrate Blue Carbon activities fully into the international policy and financing processes of the UNFCCC as part of mechanisms for climate change mitigation**

- Build awareness in the climate change policy community of the strength of scientific evidence on the carbon stored in coastal ecosystems and the emissions resulting from the degradation and destruction of these systems.
- Access carbon finance through UNFCCC mechanisms and related funding streams
- Include Blue Carbon management activities as incentives for climate change mitigation by Annex-I countries
- Provide the scientific and technical basis (data, reporting and accounting guidelines, methodologies, etc) for financing of coastal carbon management activities.

#### **Integrate Blue Carbon activities fully into other carbon finance mechanisms such as the voluntary carbon market as a mechanism for climate change mitigation**

#### **Develop a network of demonstration projects**

- Strategic coordination and funding of demonstration projects
- Capacity building at local/national level

#### **Integrate Blue Carbon activities into other international, regional and national frameworks and policies, including coastal and marine frameworks and policies**

- Enhance implementation and inform financing processes of those relevant MEAs that provide policy frameworks relevant for ocean and coastal habitats management
- Use existing international frameworks to advance and disseminate technical knowledge on coastal ecosystems management for climate change mitigation
- Use international frameworks to raise awareness of role of conservation, restoration and sustainable use of coastal ecosystems for climate change mitigation
- Integrate coastal ecosystem conservation, restoration and sustainable use activities as means for climate change mitigation in national, sub-national and sectoral policy frameworks.

#### **Facilitate the inclusion of the carbon value of coastal ecosystems in the accounting of ecosystem services**

### **6.1 Integrate Blue Carbon activities fully into the international policy and financing processes of the UNFCCC as part of mechanisms for climate change mitigation<sup>6</sup>**

A number of policy and financing mechanisms currently exist that support nature-based climate change mitigation solutions under the UNFCCC: REDD+, National Appropriate Mitigation Actions (NAMAs), the Clean Development Mechanisms (CDM) & Land-Use, Land-Use Change and Forestry (LULUCF). These mechanisms provide incentives and financial support for national-level accounting

<sup>6</sup> This report assumes a certain familiarity of the reader with UNFCCC mechanisms etc. Recommended background reading: Climate Focus. 2011. Blue Carbon Policy Options Assessment. Washington, DC, USA.

and project-level activities including conservation, restoration and sustainable use of natural systems such as forests and peatlands.

To date coastal ecosystems have largely been excluded from UNFCCC related mechanisms. Accessing currently untapped climate change mitigation finance should be a priority. Coastal ecosystems can be integrated with existing financing mechanisms and approaches with no new mechanism under the UNFCCC being needed to address these three systems. Existing mechanisms supporting climate change mitigation through natural carbon management activities (e.g. under REDD+, NAMA etc.) should be utilized whenever possible. Compatibility with current activities for mitigation in other natural systems should be encouraged, and progress already made in these areas should be leveraged.

**6.1.1 Build awareness in the climate change policy community of the strength of scientific evidence on the carbon stored in coastal ecosystems and the emissions resulting from the degradation and destruction of these systems.**

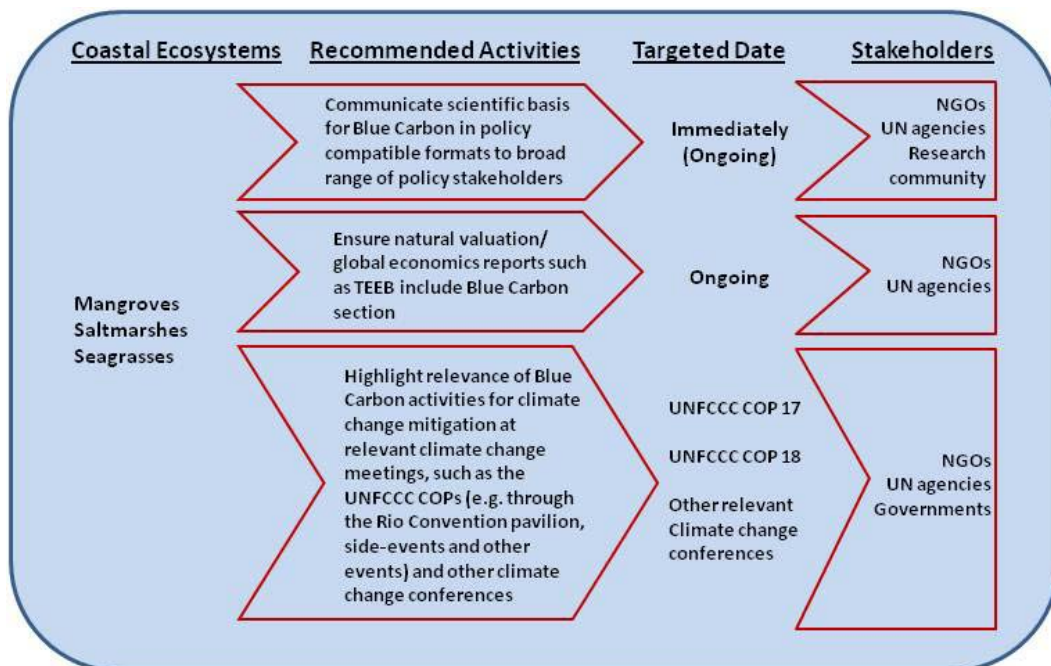
Background

The climate change policy community is largely unaware of the scientific research detailing the significant climate change mitigation potential of coastal ecosystems, specifically mangroves, tidal marshes and seagrass meadows, in climate change mitigation (see Annex 1).

Opportunities

Inclusion of coastal systems in financial mechanisms for climate mitigation will not be a priority, until the broader policy community is aware of the strong scientific basis for Blue Carbon as a source of significant emissions and that there exist cost-effective abatement solutions. The substance and certainty of the relevant science must now be communicated to the broader policy community.

Recommended activities





## 6.1.2 Access carbon finance through UNFCCC mechanisms and related funding streams

### a. Demonstrate implementation of mangrove forests as part of REDD+ 'readiness' activities

#### Background

In 2010, Parties to the UNFCCC at COP 16 recognized and encouraged developing countries to contribute to mitigation actions by the forest sector through REDD+ activities that (a) Reduce emissions from deforestation; (b) Reduce emissions from forest degradation; (c) Conserve forest carbon stocks; (d) Sustainably manage forests; and (e) Enhance forest carbon stocks.<sup>7</sup> REDD+ provides a framework suitable for financing management activities that reduce emissions from mangrove deforestation and reduce emissions and enhance removals from activities related to the use of those systems. Several countries already have mangroves included in their national REDD+ plans. Costa Rica<sup>8</sup>, Tanzania<sup>9</sup>, Indonesia<sup>10</sup> and Ecuador<sup>11</sup> for example refer to mangroves under their national submissions to the UN-REDD programme and the Forest Carbon Partnership Facility (FCPF), although mostly limited in extent and detail.

#### Opportunities

In order to ensure the full and comprehensive inclusion of mangrove forests under REDD+, specific activities are needed to support inclusion of mangroves in national REDD+ strategies. This can happen through identified REDD+ readiness activities that include improved mangrove carbon storage, sequestration and emissions data; identification of drivers of deforestation and degradation in mangroves and developing measuring, reporting and verification (MRV) systems that are capable of addressing emissions and removals by mangrove ecosystems.<sup>12</sup> The Cancun Agreements call for the development of MRV systems at the national level. National systems can ensure that intranational leakage is accounted for; they also achieve economies of scale and lower MRV costs.

<sup>7</sup> UNFCCC Decision 1/CP.16 The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention paras 68-79.

<sup>8</sup> FCPF – Costa Rica report

<sup>9</sup> FCPF – Tanzania report

<sup>10</sup> UN-REDD National programme Indonesia

<sup>11</sup> UN-REDD National programme Ecuador

<sup>12</sup> Climate Focus. 2011. Blue Carbon Policy Options Assessment. Washington, DC, USA.

National REDD+ strategies and readiness plans are being financed through current readiness funding from bilateral and multilateral development agencies and potentially through the future Green Climate Fund.<sup>13</sup> Developing countries developing national REDD+ strategies and readiness plans should include mangroves in those plans and bilateral and multilateral donors should support the inclusion of mangrove ecosystems in REDD+ readiness efforts.

The scope for REDD+ is currently limited to forest-related activities. REDD+ may eventually be broadened to include non-forest land use. If this is the case, coverage of salt marsh and seagrass related activities should be addressed.

Recommended activities

Coastal Ecosystems	Recommended Activities	Targeted Date	Stakeholders
Mangroves	Identify and work with champion developing countries on explicitly including mangrove forests as part of a country's national REDD+ strategy Possible champion countries include Ecuador, Cambodia, Vietnam, Indonesia, Mexico, PNG	Explore opportunities as soon as possible	NGOs UN agencies Research community Governments
Mangroves	Ensure input into SBSTA workplan on policy approaches and positive incentives on issues relating to REDD+	2012	NGOs UN agencies Governments
Saltmarshes Seagrasses	Explore opportunities for including additional LULUCF activities in REDD+ activities	2012	NGOs UN agencies Governments

**b. Develop NAMAs for coastal carbon ecosystems**

Background

National Appropriate Mitigation Actions (NAMAs) can allow developing countries to develop and receive international financial support for national or regional level climate change mitigation actions, in contrast to project level offsetting activities.<sup>14</sup> Several countries have already submitted coastal wetland-related NAMAs (e.g. Sierra Leone, Eritrea and Ghana).<sup>15</sup>

Opportunities

Currently the scope and definition of activities qualifying as NAMAs is broad.<sup>16</sup> This provides an opportunity for countries to tailor NAMAs to their specific needs and mitigation potential. Countries could use NAMA readiness activities to increase the understanding of emissions resulting from conversion and degradation of mangroves, saltmarshes and/or seagrasses, identify drivers of these emissions and activities needed to address those drivers. As the marine and conservation community has been looking at the drivers of coastal degradation for many years, possibilities for collaboration and lessons-learned between the climate change and marine community exist at local, country and regional levels and can be facilitated initially by the Policy and Science Working Groups and others who are interested.

13 Climate Focus. 2011. Blue Carbon Policy Options Assessment. Washington, DC, USA.

14 UNFCCC Decision 1/CP.16 The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention paras 48-67.

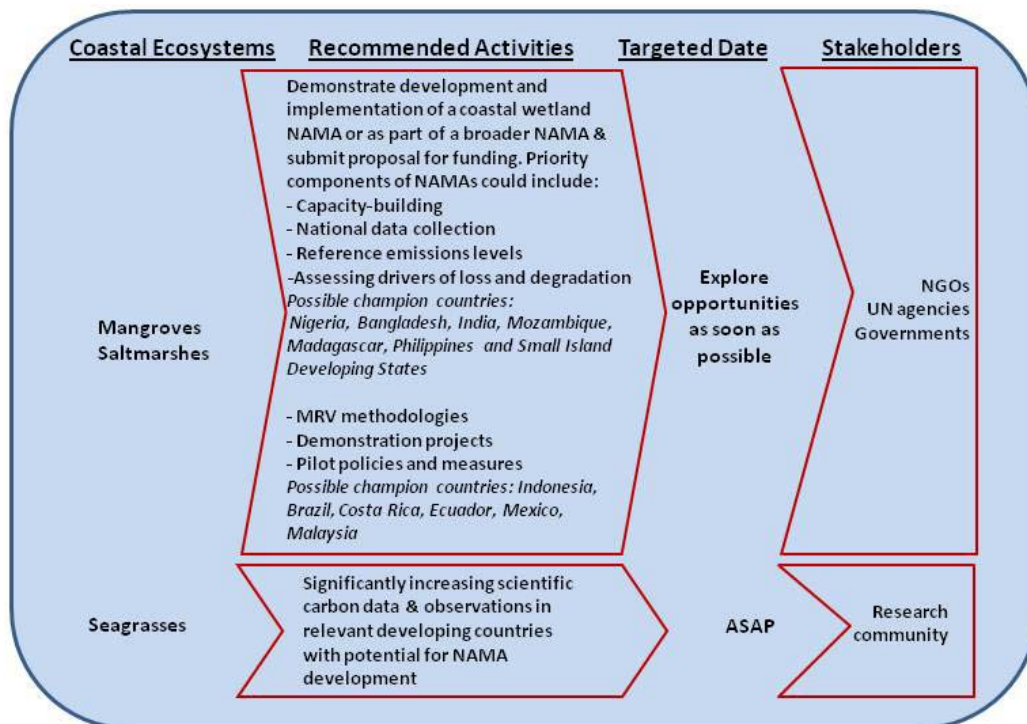
15 <http://unfccc.int/resource/docs/2011/awglca14/eng/inf01.pdf>

16 Climate Focus. 2011. Blue Carbon Policy Options Assessment. Washington, DC, USA.

Countries such as small island developing states which do not represent typical REDD+ countries could use NAMAs to explore opportunities to access climate change mitigation finance for coastal management activities. For example, countries could explore the potential for a wetland NAMA, encompassing management of all relevant national wetland types.

Funding for readiness activities and implementation of NAMAs for coastal ecosystem management could be accessed through multilateral and bilateral initiatives that are currently providing fast-start finance as well as the future Green Climate Fund.<sup>17</sup>

Recommended activities



**c. Support improved management of Blue Carbon coastal systems through adaptation financing**

Accessing currently untapped climate change mitigation finance should be a priority for funding conservation and management of coastal Blue Carbon systems. Additionally, funding from adaptation sources should also be targeted as these systems provide numerous benefits for climate change adaptation, local livelihoods and biodiversity conservation. Funding for management and conservation of these systems can therefore potentially be accessed by leveraging these multiple co-benefits. For example adaptation funding may favour projects that have adaptation and mitigation value. Once the Green Climate Fund is operable adaptation finance may increase in significance.<sup>18</sup>

17 Climate Focus. 2011. Blue Carbon Policy Options Assessment. Washington, DC, USA.

18 Climate Focus. 2011. Blue Carbon Policy Options Assessment. Washington, DC, USA.

**6.1.3 Include Blue Carbon management activities as incentives for climate change mitigation by Annex-I countries**

Background

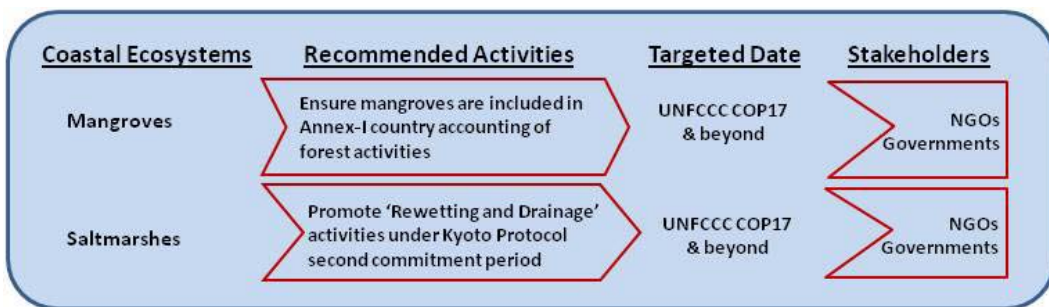
The role of Land-use, Land-use Change and Forestry (LULUCF) activities in the mitigation of climate change has been recognized within the UNFCCC. Mitigation achieved through activities in this sector, either by removing GHGs from the atmosphere or by reducing GHG emissions, can be used by Parties to the UNFCCC as part of their efforts to implement the Kyoto Protocol and contribute to the mitigation of climate change. Blue Carbon ecosystems are currently not explicitly covered as a LULUCF activity under the Kyoto Protocol carbon emissions accounting rules for industrialized Annex-I countries.<sup>19</sup> However, some mangroves may qualify as forest under the Kyoto Protocol current definitions for LULUCF and should be accounted for by Annex I countries under relevant activities of afforestation, reforestation and deforestation.

Under the Ad-hoc Working Group on the Kyoto Protocol (AWG-KP) countries are discussing accounting rules for LULUCF for a possible second commitment period of the Kyoto Protocol. “Rewetting and drainage of wetlands” is currently under discussion as an activity that may be included in national accounting of LULUCF activities under a possible second commitment period of the Kyoto Protocol. However, accounting for “rewetting and drainage” activities is unlikely to be mandatory and if included in the accounting approaches used by countries, may be inconsistent.

Opportunities

Currently the future of the Kyoto Protocol is unclear. However, discussion and agreements on accounting rules made within the ongoing Kyoto Protocol negotiations are likely to have an influence on other elements of the UNFCCC. The Cancun Agreements include mitigation by developed countries and emissions from the land-use sector will need to be considered under the mitigation discussion by developed countries continues to be addressed. Furthermore, LULUCF discussion could provide a precedent for accounting of Blue Carbon systems by developing countries.

Recommended activities



<sup>19</sup> Climate Focus. 2011. Blue Carbon Policy Options Assessment. Washington, DC, USA.



**6.1.4 Provide the scientific and technical basis (data, reporting and accounting guidelines, methodologies, etc) for financing of coastal carbon management activities.**

Background

At its 33rd session in December 2010 in Cancun, the SBSTA invited the IPCC to prepare additional guidance on wetlands. In response to this invitation and an expert workshop in May 2011, the IPCC at its 33rd session in May 2011 in Abu Dhabi decided to produce the “2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands.” Chapter 4 of that document will focus on ‘Coastal Wetlands’. This includes tidally influenced wetlands, specifically including, mangroves, saltmarshes, seagrasses and tidal freshwater systems. This supplement will contain national-level inventory methodological guidance, including default emission factor values, to fill the gaps identified in the 2006 IPCC Guidelines in the sub-categories of peatland rewetting and restoration as well as anthropogenic emissions and removals from additional coastal and freshwater wetland types.<sup>20</sup>

Mangroves and Saltmarshes

It is currently possible to quantify carbon emissions to the atmosphere resulting from degradation and removal of mangroves and salt marshes. However, the existing 2006 IPCC Guidelines for National GHG Inventories do not provide specific guidance for the estimation and reporting of anthropogenic GHG emissions from and removals by mangroves or salt marshes.<sup>21</sup> The 2013 IPCC supplement guidance on wetlands intends to address this omission.

Other issues with the 2006 IPCC Guidelines for National GHG Inventories for national GHG accounting for wetlands are particularly acute in coastal areas and will require additional attention. For example, the impact of sea-level rise on carbon sequestration rates and permanence.<sup>22</sup>

Some technical challenges exist to developing IPCC guidelines including data availability and uncertainties in emissions factors.<sup>23</sup> Additional datasets that would enable relevant analysis are needed and appropriate data collection programmes and submission to the IPCC Emissions

20 IPCC 33rd Session Abu Dhabi, 10-13 May 2011. Activities of the Task Force on National Greenhouse Gas Inventories. [http://www.ipcc.ch/meetings/session33/doc07\\_p33\\_tf\\_activities.pdf](http://www.ipcc.ch/meetings/session33/doc07_p33_tf_activities.pdf)

21 Volume 4 Agriculture, Forestry and other Land Use

22 Crooks, S. et al. 2011 Mitigating Climate Change through Restoration and Management of Coastal Wetlands and Near-shore marine Ecosystems. Challenges and Opportunities. Environment Department Paper 121, World Bank, Washington, DC, USA;

23 Murdiyarto, D. & Kauffman, J.B. 2011. Addressing climate change adaptation and mitigation in tropical wetland ecosystems of Indonesia Center for International Forestry Research (CIFOR) Bogor, Indonesia.

Factor Database (EFDB)<sup>24</sup> are required. Technical capacity is needed to generate required national information (e.g. on forest reference levels and national mapping) for inclusion into relevant UNFCCC reports and for accessing internationally MRV'ed financing.

On the project-level side progress has been made. A methodology for afforestation and reforestation of degraded mangrove habitats under the CDM has been approved beginning of 2011.<sup>25</sup>

To ensure compatibility and consistency, approaches already developed for tropical forests for avoided emissions reductions within REDD+ should be used as a basis for further developing coastal carbon methodologies. Accounting for emission reductions requires an understanding of a number of supplementary principles: baseline establishment, demonstration of additionality, issues of leakage, and the permanence of emissions reductions. These areas need additional attention. This also accounts for project-level activities fostered under the voluntary carbon market (see 5.2).

### Seagrasses

The existing 2006 IPCC Guidelines for National GHG Inventories<sup>26</sup> for national GHG accounting do not cover seagrasses. The current absence of IPCC associated guidance on seagrasses prevents the development of carbon financing or other incentives for conservation of carbon in these ecosystems. However, the UNFCCC clearly refers to the role and importance of GHG sinks and reservoirs in coastal and marine ecosystems and sets a general obligation on all Parties to promote sustainable management, conservation and enhancement of sinks and reservoirs in coastal and marine ecosystems.<sup>27</sup>

The future inclusion of seagrasses into IPCC definitions and guidance would facilitate the development of such activities. Research is now needed to support the development of IPCC guidance and building scientific understanding of carbon storage and emissions from disturbed seagrass systems. Development of projects associated with emission reductions from seagrasses is currently challenging as emissions factors for these systems have not been satisfactorily established.



24 <http://www.ipcc-nggip.iges.or.jp/EFDB/main.php>

25 AR-AM0014: Afforestation and reforestation of degraded mangrove habitats [http://cdm.unfccc.int/methodologies/DB/CK\\_SXP498IACIQHXZPEVRJXQKZ3G5WQ](http://cdm.unfccc.int/methodologies/DB/CK_SXP498IACIQHXZPEVRJXQKZ3G5WQ)

26 Volume 4 Agriculture, Forestry and other Land Use

27 Preamble and Art 4.1(d)



Specific research issues that need to be addressed include :

#### Data collection

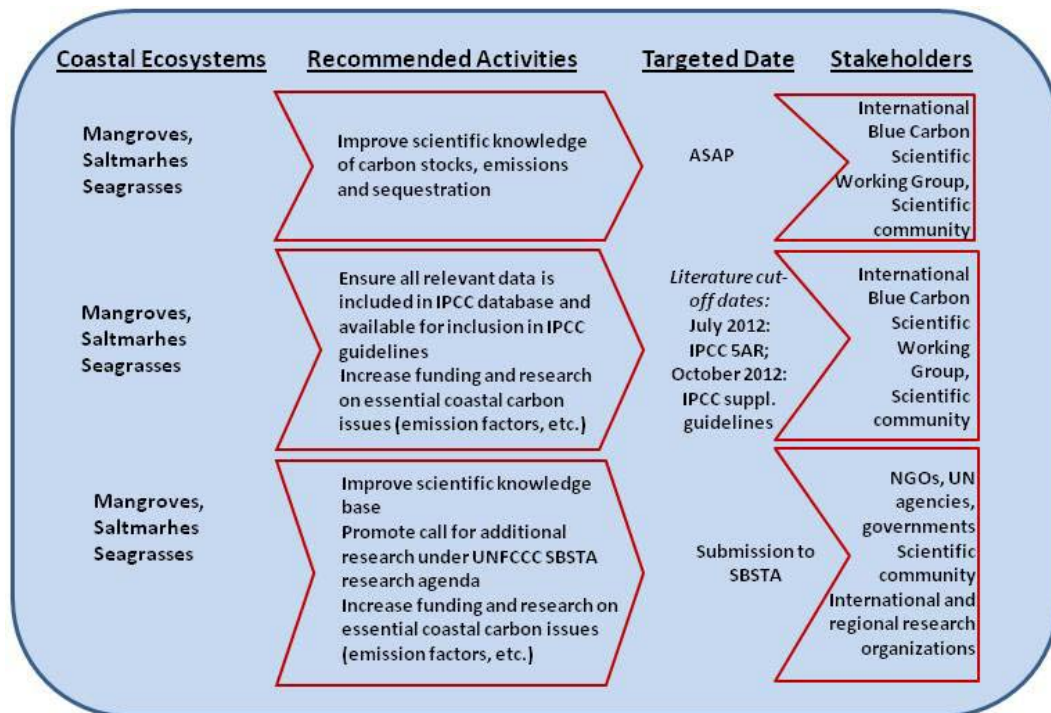
- Significantly increasing the scientific data, observations and publications from developing countries, particularly those with significant mangrove, seagrass and salt marsh areas. Increased local capacity building will be necessary to achieve this.
- Mapping of converted and degraded coastal ecosystems and the quantification of emissions from exposed organic soils.
- Improved mapping of coastal ecosystem extent and carbon pool size, particularly saltmarshes and seagrass meadows.
- Improved quantification of carbon sequestration capacity of undisturbed, restored and managed tidal wetlands
- Quantification of other GHG emissions (e.g., increasing understanding of methane releases from saltmarshes and mangroves in environments under the threshold salinity level for methane production (i.e., 181)), and development of emissions factors.

#### Monitoring emissions, emissions reductions and removals

- Further research related to emission rates over time for a range of drivers of ecosystem degradation or loss (e.g., drainage, burning, harvesting or clearing of vegetation at different intensity levels).

The International Blue Carbon Science Working Group is currently developing a Best Practice Manual for Assessing and Estimating Coastal Wetland Carbon Stock, Sequestration Rates and Emissions Rates. The manual is intended to support the IPCC Task Force updating the 2006 IPCC guidelines for wetlands as well as to guide standardized field data collection.

## Recommended activities



## 6.2 Integrate Blue Carbon activities fully into other carbon finance mechanisms such as the voluntary carbon market as a mechanism for climate change mitigation

A number of carbon market facilities and sources of funding have been established outside the UNFCCC. The Verified Carbon Standard (VCS) has been identified as the most advanced for coastal carbon systems and is given the most detail here. Other standards generating CO<sub>2</sub>-certificates include Climate, Community, and Biodiversity Standard, the CarbonFix Standard, Plan Vivo Systems and Standard.<sup>28</sup>

### a. Verified Carbon Standard (VCS)

#### Background

The Verified Carbon Standard (VCS) is a GHG accounting program used by carbon mitigation projects globally to verify and issue carbon credits for the international voluntary offsets market.<sup>29</sup> In March, 2011, a Wetlands Technical Working Group was established to develop requirements for crediting wetlands conservation projects under the VCS program.<sup>30</sup> This VCS initiative will expand the scope for crediting wetlands projects to include mangroves, coastal wetlands and potentially other project types. The work will consider GHG related processes specific to different wetland ecosystems, availability of methods for carbon accounting, measurement and monitoring. A Draft VCS Wetlands Requirements is planned to be released by the VCS late 2011 for public review (see Annex 2). These requirements will provide guidance for project design and greenhouse gas accounting and procedures for validation and verification.

28 Merger, E. & Williams, A. 2008. Comparison of Carbon Offset Standards for Climate Forestation Projects participating in the Voluntary Carbon Market. University of Canterbury, Christchurch, New Zealand. Published at: <http://www.fore.canterbury.ac.nz/research/>

29 <http://www.v-c-s.org/who-we-are>

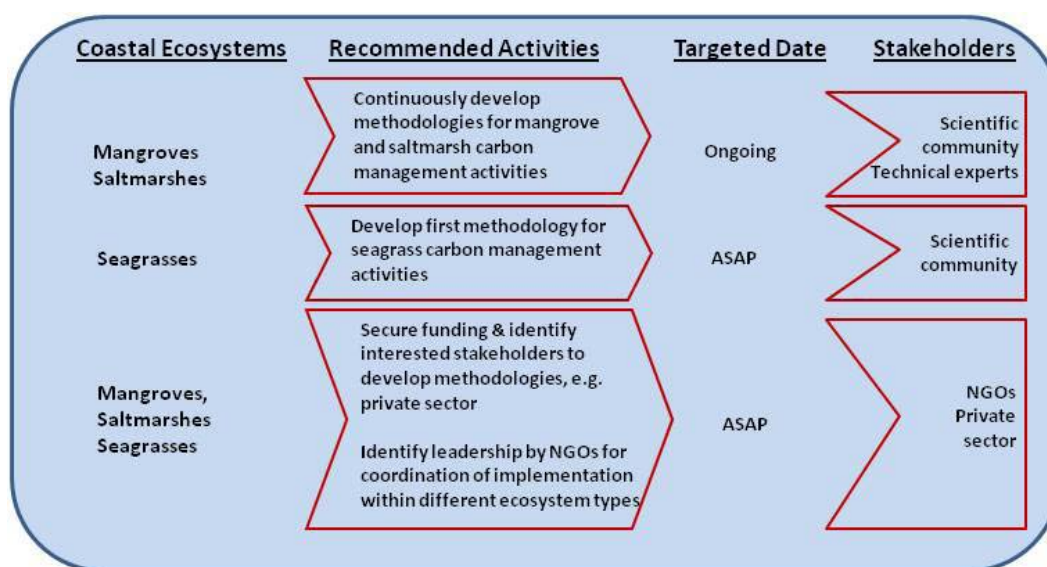
30 <http://www.v-c-s.org/node/287>

Opportunities

Following the development of the VCS requirements for specific coastal wetland activities, methodologies could be developed for project implementation that meet the requirements and address the following components of the accounting process: 1. Baseline and monitoring (stock, flux); 2. additionality; 3. permanence; and 4. quantifying leakage. A small number of draft methodologies are currently being developed but more efforts are needed to develop additional, comprehensive methodologies for pilot project(s). The private sector has started to play a role as driver for development methodologies and these avenues need to be further explored.

Additional funding, a coordinated approach, structured leadership and demand for carbon credits are needed for these efforts in the voluntary market to succeed.

Recommended activities



6.3 Develop a network of demonstration projects

Field-based demonstration projects are urgently needed to: demonstrate the viability of Blue Carbon activities, including the science, policy and potential financing mechanisms; develop and refine methodologies; and build capacity in target countries.

Opportunities

Demonstration projects should include national coastal carbon assessments, national revisions and implementation of REDD+ strategies, development of coastal carbon NAMAs and on-the-ground Blue Carbon conservation, restoration and sustainable use. Strategically designed and implemented field projects will provide

1. Demonstration of the climate change importance and viability of Blue Carbon projects to Governments, international bodies such as the UNFCCC, IPCC, and multinational agencies (such as the World Bank, the Global Environment Facility) necessary for the funding and implementation of Blue Carbon management and incentive mechanisms,
2. Venues for the development of practical, science-based methodologies and tools for UNFCCC and other frameworks that support carbon accounting for projects

3. Demonstration and testing of methodologies recently developed for mangroves reforestation under the CDM and wetlands standards and requirements currently under development for the VCS
4. Capacity building in Blue Carbon rich countries such as Indonesia, Brazil and the Philippines.



**6.3.1 Strategic coordination and funding of demonstration projects**

Opportunities

Numerous stakeholders have started development of Blue Carbon projects at sites globally. To ensure maximum efficiency, knowledge transfer and international recognition of these projects, these projects must be coordinated and networked effectively. Further, funding must be strategically targeted at expanding the network of pilot project sites. Criteria for selecting priority sites for funding should include: demonstrating and testing a range of relevant activities in a range of geographic locations, ease of implementation (including political environment), implementation capacity, social and community acceptability, data and information availability, speed to carbon credit creation and potential for capacity building.

Recommended activities

Coastal Ecosystems	Recommended Activities	Targeted Date	Stakeholders
Mangroves, Saltmarshes Seagrasses	Develop field based demonstration projects, including projects consistent with VCS and other relevant methodologies.	ASAP	NGOs Private sector Governments
	Enable strategic development and coordination of demonstration projects	ASAP	International Blue Carbon Working Groups, Other Int. coordination mechanism
	Secure funding for large scale demonstration project	ASAP	NGOs UN agencies Governments

### 6.3.2 Capacity building at local/national level

#### Opportunities

Effective implementation of Blue Carbon activities requires building national, regional, and local capacity. Implementing projects that include national coastal carbon assessments, national revisions and implementation of REDD+ strategies, development of coastal carbon NAMAs and on-the-ground Blue Carbon conservation, restoration and sustainable use projects in target countries provides a mechanism for this capacity building, including strengthening of appropriate institutions and coordination and communication between national agencies. Training for practitioners on carbon assessments, identification of priority conservation areas and restoration and sustainable use activities should also be an integral component.

Best-practice guidance for field assessments currently under development by the International Blue Carbon Science Working Group will support the growing number of Blue Carbon measurement activities. The supplementary IPCC accounting guidelines on wetlands will help support national assessments activities.

#### Recommended activities

<u>Coastal Ecosystems</u>	<u>Recommended Activities</u>	<u>Targeted Date</u>	<u>Stakeholders</u>
Mangroves Saltmarshes Seagrasses	Support implementation of demonstration projects in targeted countries	ASAP	NGOs UN agencies
	Disseminate relevant Blue Carbon information to governments, NGOs, coastal managers and other relevant stakeholders	ASAP	NGOs UN agencies
	Inform government representatives in a variety of sectors of the importance of Blue Carbon for climate mitigation so they can take that into account in land-use planning, economic planning, etc. Facilitate cooperation across ministries.	ASAP	NGOs UN agencies
	Provide training workshops on carbon accounting and conservation in coastal ecosystems	ASAP	NGOs UN agencies

### 6.4 Integrate Blue Carbon activities into other international, regional and national frameworks and policies, including coastal and marine frameworks and policies

Several international ocean and coastal policy frameworks already make reference to the conservation, sustainable use, restoration of and avoided emissions from coastal ecosystems for climate change mitigation (see Annex 3). These policy frameworks raise overall recognition, improving management activities and provide some financial support for coastal Blue Carbon ecosystems management.

These policy frameworks include: the Convention on Biological Diversity (CBD)<sup>31</sup>, Ramsar Convention on Wetlands (Ramsar)<sup>32</sup>, UN Conference on Sustainable Development (Rio +20)<sup>33</sup>, United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea<sup>34</sup>, UNEP Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA-Marine)<sup>35</sup>, as well as regional ocean and coastal policy frameworks such as South Pacific Regional Environment Programme (SPREP)<sup>36</sup> and Asia-Pacific Economic Cooperation (APEC).<sup>37</sup> Regional frameworks are not discussed in detail here.

#### **6.4.1 Enhance implementation and inform financing processes of those relevant MEAs that provide policy frameworks relevant for ocean and coastal habitats management**

The implementation of the commitments under a number of international Agreements such as the CBD and the Ramsar Convention, offer Parties immediate opportunities to meet the necessary efforts for coastal carbon management (see Annex 2). Funding mechanisms through these agreements should be fully explored and utilized.

##### **a. Convention on Biological Diversity**

###### Background

The Convention on Biological Diversity (CBD) has three main objectives: 1. The conservation of biological diversity; 2. The sustainable use of the components of biological diversity; 3. The fair and equitable sharing of the benefits arising out of the utilization of genetic resources. In 2010, the CBD in its decisions from COP10 in Nagoya invited Parties to incorporate marine and coastal biodiversity into national climate change strategies and action plans and to promote ecosystem-based approaches to climate change mitigation and adaptation.<sup>38</sup>

###### Opportunities

Countries must now be encouraged and supported in implementing those decisions, including accessing funding through multilateral & bilateral processes supporting the CBD decisions (e.g. Global Environment Facility).

The CBD is currently in the process of assessing funding needs, gaps and priorities and identifying new and innovative funding mechanisms under its strategy for resource mobilization in support of the achievement of the Convention.<sup>39 40</sup> This provides an opportunity for highlighting the importance of effective coastal management for mitigation and adaptation and the need for coastal Blue Carbon ecosystems to be considered in discussions and implementation of new and innovative sources of financing encouraged by the CBD.

The CBD is reviewing its programme of work on island biodiversity. This provides an opportunity to introduce relevant information regarding enhanced conservation, sustainable use and restoration of coastal ecosystems for climate change mitigation into coastal practices in island countries where coastal ecosystems including mangroves, wetlands and seagrasses are more likely to be relevant to the sustainable development opportunities of SIDS, food security, livelihoods, and vulnerability to impacts of climate change.

31 [www.cbd.int](http://www.cbd.int)

32 [www.ramsar.org](http://www.ramsar.org)

33 [www.uncsd2012.org](http://www.uncsd2012.org)

34 [www.un.org/Depts/los/consultative\\_process/consultative\\_process.htm](http://www.un.org/Depts/los/consultative_process/consultative_process.htm)

35 [www.gpa.unep.org/](http://www.gpa.unep.org/)

36 [www.sprep.org/](http://www.sprep.org/)

37 [www.apec.org](http://www.apec.org)

38 CBD COP 10 Decision X/29 Marine and Coastal Biodiversity; CBD COP 10 Decision X/33 Biodiversity and Climate Change

39 Strategy for resource mobilization - <http://www.cbd.int/financial/strategy/>

40 COP 10 Decision X/3 Strategy for resource mobilization in support of the achievement of the Convention's three objectives - <http://www.cbd.int/decision/cop/?id=12269>

**b. Ramsar Convention on Wetlands**

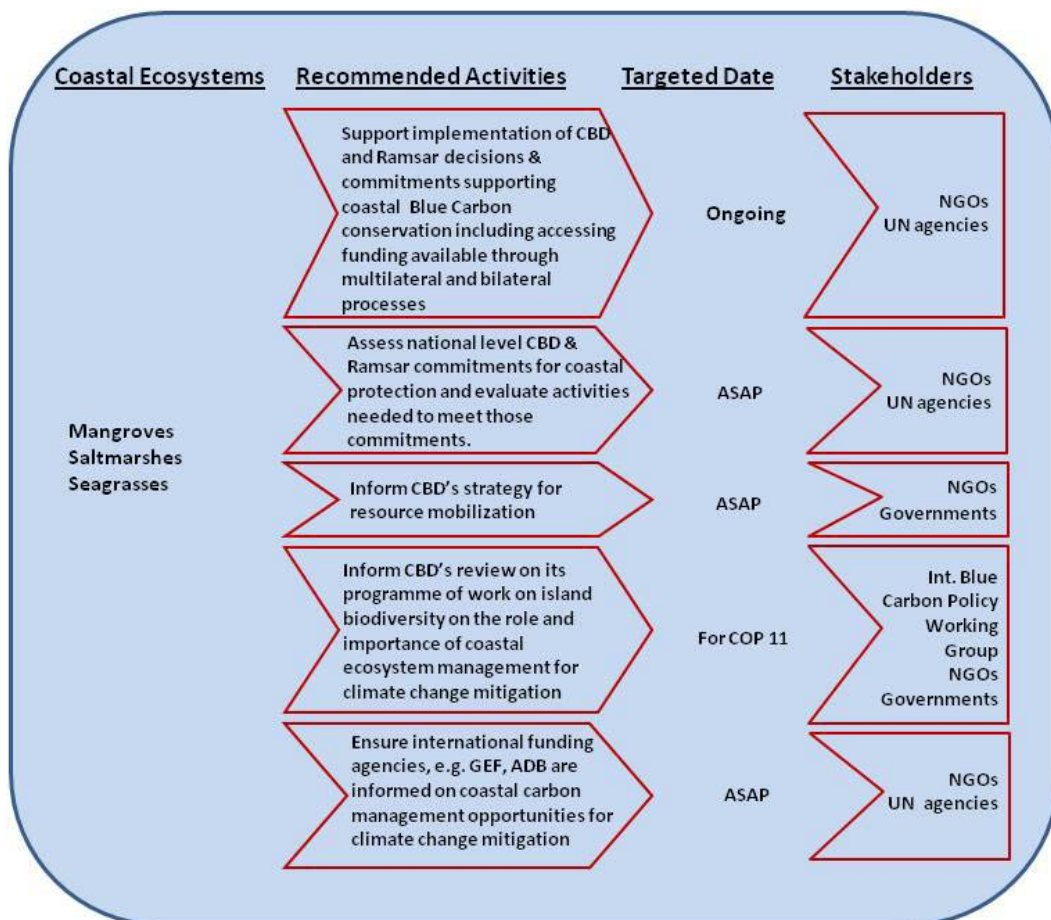
Background

The Ramsar Convention on Wetlands is a global intergovernmental treaty that promotes the conservation and wise use (sustainable use) of all wetlands through local and national actions and international cooperation.<sup>41</sup> The Contracting Parties of the Ramsar Convention have adopted a number of Resolutions that have relevance to coastal carbon management and the Convention’s Scientific and Technical Review Panel (STRP) is currently working on different tasks related to climate change mitigation and wetlands (see Annex 2).

Opportunities

Parties could access funding to implement relevant Resolutions for coastal Blue Carbon conservation through multilateral & bilateral processes (e.g. GEF). Ramsar’s Small Grant Programmes could also be an opportunity to support pilot projects in the ground.

Recommended activities



41 [http://www.ramsar.org/cda/en/ramsar-about-mission/main/ramsar/1-36-53\\_4000\\_0\\_](http://www.ramsar.org/cda/en/ramsar-about-mission/main/ramsar/1-36-53_4000_0_)

#### 6.4.2 Use existing international frameworks to advance and disseminate technical knowledge on coastal ecosystems management for climate change mitigation

##### Background

Existing international frameworks provide established mechanisms for advancing and disseminating knowledge on coastal ecosystems management for climate change mitigation. Further, coordinating capacity building and knowledge and best practices sharing should be coordinated in parallel with the development of a network of demonstration projects.

##### Opportunities

Opportunities for capacity building through existing frameworks include:

1. The CBD through its Clearing-House Mechanism<sup>42</sup> and capacity-building programs<sup>43</sup> provides venues to address the scientific and technical information needs of developing countries. Priority is given to issues identified by the countries themselves, such as assessing national capacities for implementing the Convention and improving access to new information technologies and expertise. The CBD has called for an expert workshop on the role of marine and coastal biodiversity and ecosystems in adaptation to and mitigation of climate change impacts, with the goals of sharing experiences and providing guidance for planning and implementing ecosystem-based approaches to climate change mitigation and adaptation.
2. The Ramsar Convention's Scientific and Technical Review Panel (STRP) is a subsidiary body that provides scientific and technical guidance to the Conference of the Parties, the Standing Committee, and the Ramsar Secretariat. Scientific experts, for example from the International Blue Carbon Science Working group, could be considered as observers to or nominated as a member of STRP.
3. STRP is working on producing a report on the carbon balance methods in wetlands. Possible synergies with other efforts such as the ongoing work under the VCS need to be further coordinated.



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4. The UNEP Global Program Action for the Protection of Marine Environment from Land-based Activities (GPA-Marine) aims at preventing the degradation of the marine environment from land-based activities by facilitating the realization of the duty of States to preserve and protect the marine environment.<sup>44</sup> GPA-Marine has so far not explicitly included recommendations for

42 CHM - <http://www.cbd.int/chm/intro/>

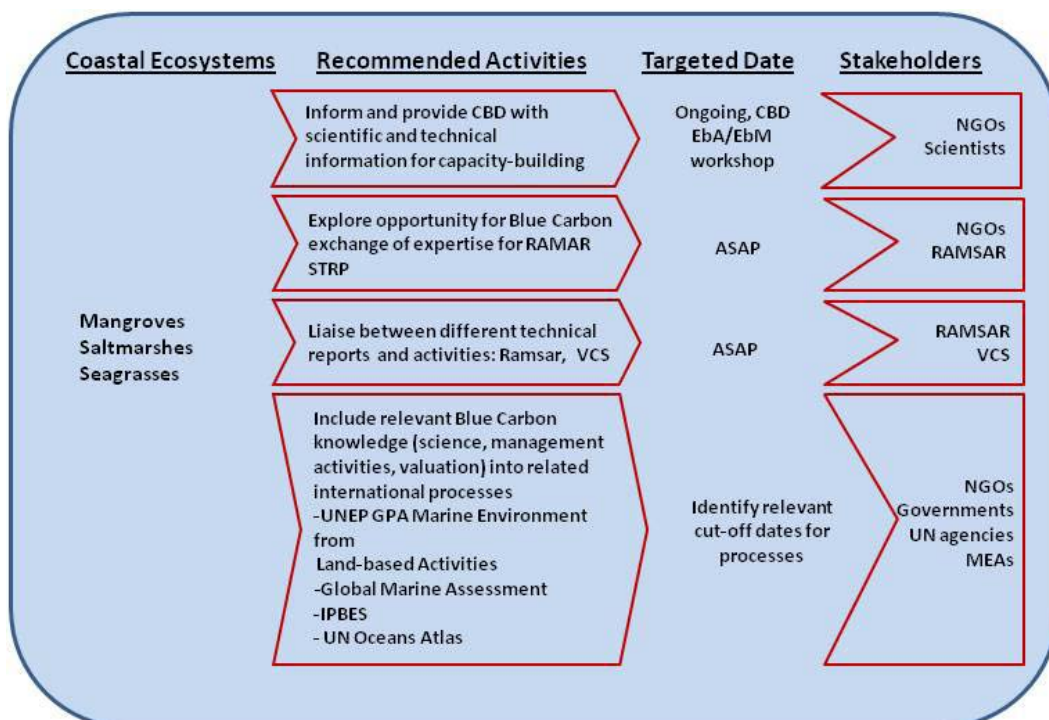
43 CHM - <http://www.cbd.int/chm/capacity.shtml>

44 <http://www.gpa.unep.org/>

better management of coastal ecosystems for climate change mitigation (see Annex 4 of the International Blue Carbon Policy working Group workshop report). GPA-Marine could however in the future play a vital venue for providing practical guidance for coastal carbon management by devising and implementing sustained action to prevent, reduce, control and/or eliminate marine degradation from land-based activities focusing on point sources and non-point sources of pollution from land-based activities.

5. The Regular process for global reporting and assessment of the state of the marine environment, including socio-economic aspects (Regular Process) has been launched by the United Nations General Assembly (UNGA).<sup>45</sup> This is a further venue for scientific information on the role of coastal ecosystems to be addressed.
6. The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) is an interface between the scientific community and policy makers that aims to build capacity for and strengthen the use of science in policy making.<sup>46</sup> IPBES will bring information together and synthesize and analyze it for decision making in a range of policy fora such as the global environmental conventions and development policy dialogues. It seems important that this process integrates the role of conservation, sustainable use and restoration of coastal ecosystems for climate change mitigation, as well as adaptation, into its efforts.
7. The UN Oceans Atlas is an information system designed to familiarize policy makers with ocean issues and provide access to scientists, students and resource managers to underlying data bases and approaches to sustainability.<sup>47</sup> This Atlas could add 'mitigation' as a sub topic under its Climate Change theme.

Recommended activities



45 Regular Process - [http://www.un.org/Depts/los/global\\_reporting/global\\_reporting.htm](http://www.un.org/Depts/los/global_reporting/global_reporting.htm)

46 IPBES website - <http://ipbes.net/about-ipbes.html>

47 UN Atlas - <http://www.oceansatlas.org/>

### 6.4.3 Use international frameworks to raise awareness of the role of conservation, restoration and sustainable use of coastal ecosystems for climate change mitigation

#### Background

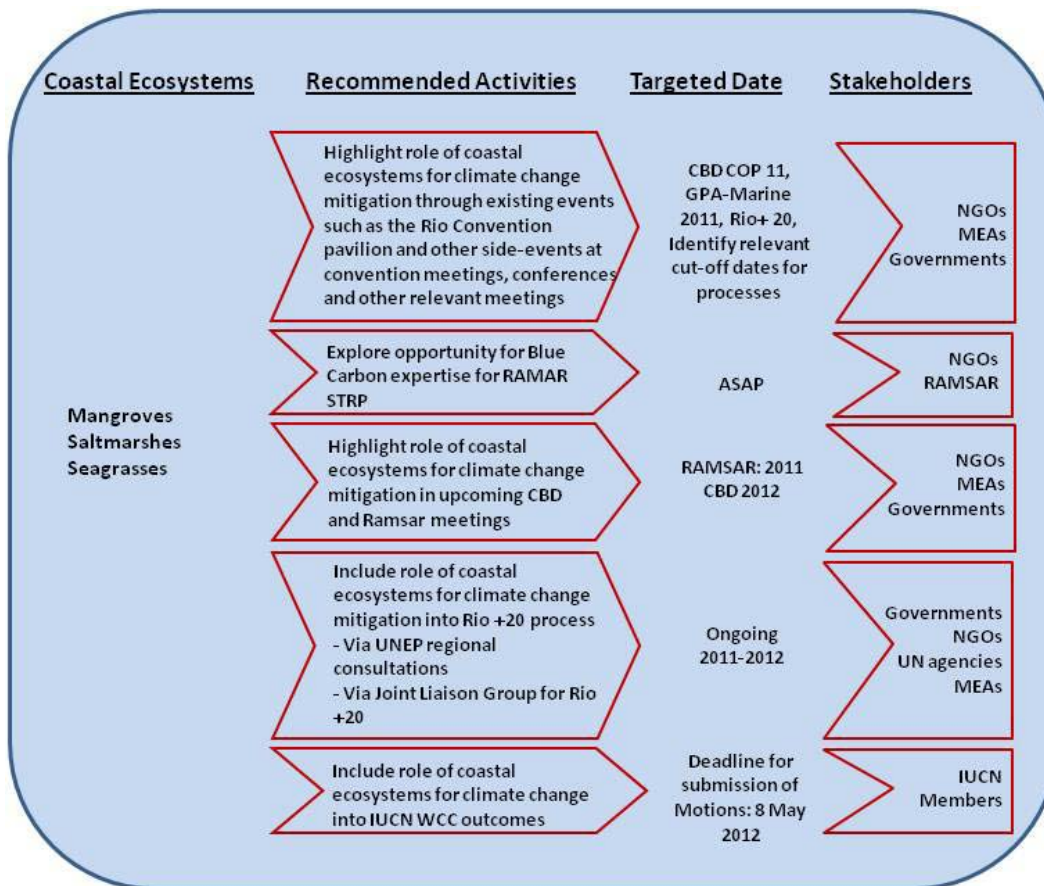
Meetings and communications associated with international frameworks provide opportunities for building awareness and support for coastal carbon-based conservation and restoration. This can support implementation of the relevant parts of the frameworks themselves but also have influence on change within other frameworks such as the UNFCCC.



#### Opportunities

1. Conventions such as the Ramsar Convention already integrate the importance of adequate coastal ecosystem management for climate change mitigation and other benefits (see Annex 2). Climate change related activities of these Conventions should continue to highlight the role of conservation, sustainable use and restoration of coastal ecosystems for climate change mitigation in their resolutions and/or decisions.
2. At the 2012 UN Conference on Sustainable Development (Rio +20) , many Small Island States will be focused on 'keeping the green economy blue'. This provides an opportunity to emphasise the role of effective coastal ecosystem management for climate change mitigation, as well as adaptation and its benefit for coastal communities in developing States. Rio +20 is also supporting a Pavilion at the UNFCCC COP17 (Durban, South Africa December 2011) and CBD COP 11 to be held in India in October 2012, which provide venues to continue to raise awareness of the issue.
3. The IUCN World Conservation Congress in June 2012 provides a further venue for highlighting the role of coastal ecosystem management for climate change mitigation and for confirming the Union's engagement in this topic for its next quadrennial programme.

Recommended activities



**6.4.4 Integrate coastal ecosystem conservation, restoration and sustainable use activities as means for climate change mitigation in national, sub-national and sectoral policy frameworks.**

At its first workshop the International Blue Carbon Policy Working Group focused its discussion on international Blue Carbon financing and policy opportunities and related national activities. Detailed national level planning and implementation or sectoral policies were not discussed.

Additional areas of work include the following topics:

1. Development of specific guidance for inclusion of Blue Carbon into national climate change activities;
2. Implementation of capacity building and other activities leading to national preparedness for international incentives applicable to coastal carbon systems;
3. Implementation of national coastal and ocean frameworks to enhance coastal ecosystems management for climate change mitigation e.g. the implementation of integrated coastal zone management (ICZM), marine spatial planning (MSP) or marine protected areas (MPAs);
4. Implementation of sectoral policies such as aquaculture and coastal forestry policies that avoid coastal carbon emissions. For example, new aquaculture enterprises should not be located in areas that are high in sequestered carbon.

## 6.5 Facilitate the inclusion of the carbon value of coastal ecosystems in the accounting of ecosystem services

The International Blue Carbon Policy Working Group identified the inclusion of the carbon value of coastal ecosystems in the accounting of ecosystem services as an overarching Blue Carbon Policy Objective. Detailed discussion was however not feasible at this meeting.

Additional efforts should consider how to best include the carbon value of coastal ecosystems in the accounting and payment of other ecosystem services, e.g. stacking of payments for ecosystem services.



## 7. Communicating Blue Carbon

A strategic and coordinated communications plan is needed to support the implementation of the Blue Carbon Policy framework so to ensure the relevant policy audience is updated and kept informed of the latest developments. Key communication priorities include:

1. Communication of the scientific foundation for Blue Carbon including Blue Carbon sinks and sources are, and why it is now important that they are included in an expanded approach to management of natural carbon sinks and sources;
2. Explain the evidence base on which policy action is both justified and is being taken forward, and similarly set out the enhanced science agenda needed to reduce uncertainties in key areas of evidence and action
3. Show where actions are already been taken by organizations and countries to capitalize on the opportunities that Blue Carbon represents – showcase demonstration projects already underway;
4. Communicate best practices on methodologies, standards and project implementation processes.

# Annexes

## Annex 1 List of recent scientific articles

Alongi, D. Carbon payments for mangrove conservation: ecosystem constraints and uncertainties of sequestration potential. *Australian Institute of Marine Science*. 14, 462-470 (2011).

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## Annex 2 Current VCS activities on wetlands

The Verified Carbon Standard is a greenhouse gas accounting program used by projects around the world to verify and issue carbon credits in voluntary markets. VCS was founded in 2005 by business and environmental leaders who identified a need for greater quality assurance in voluntary markets.

The VCS Program is among the most widely used quality assurance system for accounting for (GHG) emission reductions in the voluntary carbon market. Used by more than 600 projects worldwide, the VCS Program is recognized and trusted to ensure GHG emission reductions and removals are real, measurable, additional, permanent, independently verified, conservatively estimated, uniquely numbered and transparently listed in a central database.<sup>48</sup>

### *AFOLU Projects*

VCS is a recognized leader in the Agriculture, Forestry and Other Land Use, or AFOLU, sector. Guided by the AFOLU Steering committee, VCS has developed requirements for crediting a range of projects and approaches, including a unique buffer-account approach to insure against the risk that carbon stocks might be lost to fire or other causes. The AFOLU Steering Committee continues to guide the development of requirements for new project types and approaches. There are currently five eligible categories of AFOLU project activities:

- ARR: Afforestation, Reforestation and Revegetation
- ALM: Agricultural Land Management
- IFM: Improved Forest Management
- REDD: Reducing Emissions from Deforestation and Degradation
- PRC: Peatland Rewetting and Conservation

### *Considerations of Blue Carbon in VCS to Date*

A Wetlands Technical Working Group began work in March 2011 to develop requirements for crediting wetlands conservation projects under the VCS Program. Restore America's Estuaries (RAE) will oversee the scientists and technical experts – from VCSA, Silvestrum, ESA PWA, the Smithsonian Environmental Research Center and the US Forest Service – who will develop the requirements. The initiative will expand the scope for crediting wetlands projects to include mangroves, coastal wetlands and potentially other project types.

Key questions the working group will consider include:

- Eligible project activities (e.g. ARR, ALM, IFM and REDD on wetlands);
- Eligible habitat types (e.g. salt marsh, mangroves, freshwater tidal wetlands, underwater grasses, floodplains);
- Whether or not the new requirements will be an extension or replacement of the PRC requirements or an additional category;
- GHG-related processes specific to wetland ecosystems.

### *Draft Project Timeline for the Wetlands Technical Working Group (2011)*

- March: Draft Scoping Document and present to VCS for approval
- April : Revise Scoping Document as needed
- May: Convene working meeting of technical and scientific experts in DC
- June: Continue drafting Wetlands Requirements
- November: Complete Draft of Wetlands Requirements and submit to VCS for comments
- January: Revise Draft based on comments from VCS
- Janaury: Public Review
- March: Submit final Wetlands Requirements to VCS Steering Committee and Board for approval <sup>49</sup>

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<sup>48</sup> <http://www.v-c-s.org/how-it-works/vcs-program>

<sup>49</sup> Proposal to Develop Wetlands Requirements for VCS, Submitted by Restore America's Estuaries March 3, 2011

## **Annex 3 Blue Carbon Related Activities in International Oceans and Coastal Fora to Date**

### **A. Convention on Biological Diversity**

The CBD is an international agreement dedicated to promoting sustainable development through promoting all aspects of biological diversity, including genetic resources, species, and ecosystems. It was signed by 150 government leaders at the 1992 Rio Earth Summit.

#### *Main objectives of the CBD*

1. The conservation of biological diversity
2. The sustainable use of the components of biological diversity
3. The fair and equitable sharing of the benefits arising out of the utilization of genetic resources

#### *Considerations of Blue Carbon in the CBD to Date*

CBD COP10 Decision X/2 The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets Decision X/2 adopts the new Strategic Plan for Biodiversity covering the period 2011 – 2020. This Strategic Plan is intended to apply to all processes and approaches addressing biodiversity and, as such, is not limited only to the CBD.

Of particular relevance within this decision is Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning and Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

#### *CBD COP 10 Decision X/29 Marine and Coastal Biodiversity*

The CBD COP 10 adopted decisions on marine and coastal biodiversity that refer to Blue Carbon issues. The decisions recognized that the ocean is one of the largest natural reservoirs of carbon and has the potential to significantly impact the rate and scale of climate change, and invited governments and other relevant institutions to incorporate marine and coastal biodiversity into national climate change strategies and action plans.

The conference stressed the importance of governments, relevant organizations, and indigenous and local communities to address climate change adaptation and mitigation issues and incorporate the role of marine and coastal ecosystems such as coral reefs, estuaries, salt marshes, mangroves, and seagrasses. The conference called for increased effort to identify the current scientific and policy gaps in order to enhance the sustainable management of the natural carbon sequestration services of marine and coastal biodiversity. Likewise the conference called for increased resilience of coastal and marine ecosystems through the establishment of marine protected areas, in line with the 2012 target.

The conference invited parties, governments, and donor agencies to promote ecosystem-based approaches to climate change mitigation and adaptation to improve resilience of marine and coastal ecosystems. The conference also called for an expert workshop on the role of marine and coastal biodiversity and ecosystems in adaptation to and mitigation of climate change impacts, with the goals of sharing experiences and providing guidance for planning and implementing ecosystem-based approaches to climate change mitigation and adaptation.

#### *CBD COP 10 Decision X/33 Biodiversity and Climate Change*

COP 10 also adopted several actions regarding biodiversity and climate change that are relevant to Blue Carbon. The conference noted the ongoing discussions regarding REDD+ and its role in achieving both the goals of the UNFCCC and the CBD, and encouraged the inclusion of biodiversity in the ongoing discussions of this issue. In this regard, the conference promoted enhancing benefits for and avoiding negative impacts on biodiversity as a result of REDD+ activities, and encouraged other sustainable land management and biodiversity conservation and sustainable-use activities, taking into account the need to ensure full participation of indigenous and local communities in the policy-making and implementation process.

The conference stressed the importance of the conservation of soil biodiversity, especially in regard to conserving and restoring organic carbon in soil and biomass, including peatland and other wetlands. The conference agreed to enhance the conservation, sustainable use and restoration of marine and coastal habitats that are vulnerable to the affects of climate change or which contribute to climate change mitigation such as mangroves, peatlands, tidal salt-marshes, kelp forests and seagrass beds, in line with the objectives of the UNFCCC, the UN Convention to Combat Desertification, and the Ramsar Convention on Wetlands. This decision builds on on-going work called for in decision IX/16 on the enhanced integration of climate change considerations within national biodiversity strategy and actions plans. So far sub-regional capacity building workshops on this topic have been held for the Caribbean and Pacific islands with plans to hold a third workshop for Indian Ocean islands when funding becomes available.

#### CBD COP 10 Decision X/28 Biological Diversity of Inland Water Ecosystems

Decision X/28 of the CBD COP 10 noted the need to clarify the scope of and interlinkages between the CBD's work on the biological diversity of inland water ecosystems and marine and coastal ecosystems. The CBD invited the secretariat of the Ramsar Convention on Wetlands to undertake joint work on an assessment of ways and means to address relevant inland water biodiversity needs in coastal areas and to report on this matter to the fifteenth meeting of the SBSTA.

The CBD report on assessment of ways and means to address relevant inland water biodiversity in coastal areas underlines that the primary ecologic connectivity between these various areas and ecosystem components occurs through hydrological influences. Coherence between the programmes of work themselves is however less important than how the programmes of work are implemented. In this regard, the chief way and means to address relevant needs is to adopt the ecosystem approach and consider requirements in the context of the Strategic Plan for Biodiversity (2011-2020) and the Aichi Biodiversity Targets. Other ways and means to address needs include better recognition that the Ramsar Convention is relevant across the broad interests of the CBD and that terminology and scope are flexible.

#### CBD COP10 Decision X/31 Protected Areas

Decision X/31 on protected areas contains a number of references to the role of protected areas, including marine protected areas in climate change mitigation. The decision further calls for the development of additional communication and outreach material to highlight the important role of protected areas in carbon sequestration as well as climate change adaptation. Furthermore, Parties reiterated their commitment to target 1.2 of the programme of work on protected areas by 2015, through concerted efforts to integrate protected areas into wider landscapes and seascapes and sectors, including through the use of connectivity measures such as the development of ecological networks<sup>50</sup> and ecological corridors, and the restoration of degraded habitats and landscapes in order to address climate change impacts and increase resilience to climate change. In doing so, the decision calls for additional funding to support the carbon sequestration functions of protected areas.

### **B. Ramsar Convention on Wetlands**

The Convention on Wetlands of International Importance, called the Ramsar Convention, is an intergovernmental treaty concerned with the increasing loss and degradation of wetland habitat, which was adopted in Ramsar, Iran, in 1971. It is the only global environmental treaty that focuses on a particular type of ecosystem, and includes member countries from all regions of the world.<sup>51</sup>

#### *Mission*

The Convention's mission is "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world."<sup>52</sup>

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<sup>50</sup> In the context of this programme of work, a generic term used in some countries and regions, as appropriate, to encompass the application of the ecosystem approach that integrates protected areas into broader land- and/or seascapes for effective conservation of biodiversity and sustainable use.

<sup>51</sup> [http://www.ramsar.org/cda/en/ramsar-home/main/ramsar/1\\_4000\\_0\\_\\_](http://www.ramsar.org/cda/en/ramsar-home/main/ramsar/1_4000_0__)

<sup>52</sup> [http://www.ramsar.org/cda/en/ramsar-about-mission/main/ramsar/1-36-53\\_4000\\_0\\_\\_](http://www.ramsar.org/cda/en/ramsar-about-mission/main/ramsar/1-36-53_4000_0__)

The Convention uses a broad definition of the types of wetlands covered in its mission, including lakes and rivers, swamps and marshes, wet grasslands and peatlands, oases, estuaries, deltas and tidal flats, near-shore marine areas, mangroves and coral reefs, and human-made sites such as fish ponds, rice paddies, reservoirs, and salt pans.

*Considerations of Blue Carbon in Ramsar to Date*

The Scientific and Technical Review Panel (STRP) reported at their 16th meeting that they are preparing a review of the information relevant to wetlands from the IPCC 4th Assessment Report, which will be published as a Ramsar Technical Report.

Work on the implications of REDD+ for wetlands is ongoing. The STRP will prepare a COP 11 Draft Resolution on climate change titled, "Wetlands and Climate Change: Updated Issues and Considerations for the Ramsar Convention," accompanied by a COP 11 Information Paper providing summaries and key messages, including the IPCC AR4 and REDD+ work.<sup>53</sup>

A resolution of Ramsar COP 10 was to urge relevant Contracting Parties to take urgent action to reduce the degradation, promote restoration, improve management practices of peatlands and other wetland types that are significant GHG sinks, and to encourage expansion of demonstration sites on peatland restoration and wise use management in relation to climate change mitigation and adaptation activities.

COP 10 encouraged Contracting Parties and other organizations to undertake studies of the role of wetlands in carbon storage and sequestration, in adaptation to climate change, including for flood mitigation and water supply, and in mitigating the impacts of sea level rise, and to make their findings available to the Convention, the UNFCCC and other relevant processes.

Another resolution of COP 10 was for the STRP to continue its work on climate change as a high priority and, in conjunction with the Ramsar Secretariat, to collaborate with relevant international conventions and agencies, including UNFCCC, CBD, UNCCD, IPCC, UNEP, UNDP, FAO and World Bank, in the development of a multi-institutional coordinated program of work to investigate the potential contribution of wetland ecosystems to climate change mitigation and adaptation, in particular for reducing vulnerability and increasing resilience to climate change.<sup>54</sup>

A Ramsar Technical Report on "Methods for assessing carbon balances and processes in wetlands" is being prepared by our invited expert Colin Lloyd and will be hopefully published before the end of the year.

The Tehran Declaration on Wetlands and sustainable development (March 6, 2011) "Urges the Contracting Parties with the support of the Secretariat and the Scientific and Technical Review Panel to seek the inclusion of wetlands in the "REDD+" mechanism for reducing carbon emissions from ecosystem destruction and degradation". Ramsar is also working closely with the Society for Ecological Restoration International (SER) to update and expand our restoration guidance and on REDD+ issues.

**Related Blue Carbon Activities**

***The Danone Wet Carbon partnership***

In October 2008, the Ramsar Convention Secretariat, IUCN and the Danone Group (a multinational company known for its yogurt and water brands) signed a Memorandum of Understanding to work together to preserve and restore wetland ecosystems that are crucial to the carbon cycle, in various locations across the planet. This partnership aimed to:

- develop wetland carbon methodology specifications for measuring carbon sequestration in restored mangrove ecosystems, and
- design and implement pilot wet carbon projects.

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<sup>53</sup> Report of the 16th Meeting of the Scientific & Technical Review Panel (STRP)

<sup>54</sup> Ramsar COP 10 Resolution X.24 Climate Change and Wetlands

In this partnership, Ramsar Convention and IUCN have an advisory role, providing Danone with technical advice on whether Wetland carbon methodologies & guidance, wetland carbon projects, Biodiversity strategy & action plan, communication and governance.

In November 2009, an Expert Workshop was held in Gland, Switzerland for the purpose of reviewing and advising on the further development of the Danone/IUCN/Ramsar partnership in the context of other wetland-related carbon storage and offsets initiatives and projects. [For more details please follow the link: [http://www.ramsar.org/pdf/DFN\\_report\\_Final.pdf](http://www.ramsar.org/pdf/DFN_report_Final.pdf)]

To date, the company has decided to invest in two pilot projects – the first in Senegal and another in India. All of them are funded with the aim of providing an initial test of the wet carbon approach and to derive lessons learned for the further development of a new class of wet carbon investments. The “Senegal” project, started in 2009, supports of a local NGO working with rural communities to implement a mangrove planting campaign. A large scale methodology for A/R of degraded mangrove habitats was developed under this partnership by Sylvestrum and partners. The methodology has recently been approved by the Executive Board of the Clean Development Mechanism.

#### **Livelihood Fund**

Danone along with several other companies launched in July 2011 a new Livelihoods Fund to give investors “access to carbon credits with ‘strong social impact’.” In this new venture to offset the carbon emissions of their operations, Danone has teamed up with Crédit Agricole, Schneider Electric and CDC Climat to establish “a carbon investment fund that helps poor rural communities by generating financial resources for projects with high social and environmental value.”

#### **C. United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea**

In 1999, the General Assembly decided to establish the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS or ICP) in order to facilitate the annual review by the General Assembly, in an effective and constructive manner, of developments in ocean affairs and the law of the sea by considering the report of the Secretary-General on oceans and the law of the sea and by suggesting particular issues to be considered by it, with an emphasis on identifying areas where coordination and cooperation at the intergovernmental and inter-agency levels should be enhanced (resolution 54/33).<sup>55</sup>

##### *Considerations of Blue Carbon to date:*

Oceans and the law of the sea. Report of the Secretary-General <sup>56</sup> to the 12th UNICPOLOS meeting

- Recognition of the carbon captured by mangroves, salt marshes, seagrasses
- Recognition that certain practices relating to terrestrial and marine resources and land use can decrease greenhouse gas sinks and increase atmospheric emissions and loss of biological diversity can reduce the resilience of ecosystems to climatic variations.
- Recognition of the need to enhance knowledge to address climate change adaptation and mitigation by, inter alia, identifying current scientific and policy gaps in order to promote sustainable management, conservation and enhancement of natural carbon sequestration services of marine and coastal biodiversity was also expressed.
- Recognition of, with the view to improving the sustainable management of coastal and marine areas and to increasing the resilience of coastal and marine ecosystems, the identification of underlying drivers of marine and coastal ecosystems loss and destruction would need to be addressed.

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<sup>55</sup> [http://www.un.org/Depts/los/consultative\\_process/consultative\\_process.htm](http://www.un.org/Depts/los/consultative_process/consultative_process.htm)

<sup>56</sup> [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/66/70/Add.1](http://www.un.org/ga/search/view_doc.asp?symbol=A/66/70/Add.1)

#### **D. UN Conference on Sustainable Development (Rio +20)**

The United Nations Conference on Sustainable Development (UNCSD) is being organized in pursuance of General Assembly Resolution 64/236. The Conference will take place in Brazil on 4-6 June 2012 to mark the 20th anniversary of the 1992 United Nations Conference on Environment and Development (UNCED), in Rio de Janeiro, and the 10th anniversary of the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg. It is envisaged as a Conference at the highest possible level, including Heads of State and Government or other representatives. The Conference will result in a focused political document.

##### *Objective of the Conference*

The objective of the Conference is to secure renewed political commitment for sustainable development, assess the progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development, and address new and emerging challenges.

##### *Themes of the Conference*

The Conference will focus on two themes: (a) a green economy in the context of sustainable development and poverty eradication; and (b) the institutional framework for sustainable development.

The UNCSD Secretariat together with its partners has prepared a series of Rio+20 Issues Briefs. The purpose of the Rio+20 Issues Briefs is to provide a channel for policymakers and other interested stakeholders to discuss and review issues relevant to the objective and themes of the conference.

##### *Consideration of Blue Carbon to date*

###### **Intersessionals and Prep-conferences**

While the green economy concept is still being developed, consensus is emerging that a green economy needs to benefit the coastal communities in developing States who depend on a healthy ocean for their survival. At the second Preparatory Committee Meeting for UNCSD in March 2011, Member States (SIDS, AOSIS – Fiji, Seychelles, Nauru) and stakeholders made calls to 'keep the green economy blue' and prominently feature oceans and fisheries issues on the agenda of UNCSD.

Priority sectors mentioned for a green economy included forests, land and soil conservation, agriculture and food security, ocean ecosystems and ocean acidification, fisheries, natural resource extraction and restoration of natural assets.<sup>57</sup>

###### **NGO/Civil Society engagement**

Different NGOs and groupings/alliances have released recommendations for Rio+20 or are working on products, e.g. Pew Environment Group<sup>58</sup> and Global Ocean Forum. References to Blue Carbon are inconsistent and sometimes absent.

The Global Oceans Forum will develop various assessment reports, including related to climate change and Blue Carbon. The deadline for completion is August 2011. Drafts of assessments should be completed for peer review by September 2011. A consultation meeting to review assessments will be held in November 2011 (prior to November 1). Outcomes of critical assessments will be submitted as input to the Rio+20 Preparatory Process. A 6th Global Oceans Conference will be held prior to Rio+20.

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<sup>57</sup> Co-Chairs' Summary, Second Preparatory Committee Meeting, United Nations Conference on Sustainable Development, 7-8 March 2011

<sup>58</sup> Bringing the Ocean back into the Earth Summit: Recommendations to the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea [http://www.pewenvironment.org/uploadedFiles/PEG/Publications/Other\\_Resource/Pew\\_Recommendations\\_UNICPOLOS.pdf](http://www.pewenvironment.org/uploadedFiles/PEG/Publications/Other_Resource/Pew_Recommendations_UNICPOLOS.pdf)

### **E. UNEP Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA-Marine)**

The GPA-Marine was adopted by the international community in 1995 and “aims at preventing the degradation of the marine environment from land-based activities by facilitating the realization of the duty of States to preserve and protect the marine environment”. It is unique in that it is the only global initiative directly addressing the connectivity between terrestrial, freshwater, coastal and marine ecosystems.

The GPA is designed to be a source of conceptual and practical guidance to be drawn upon by national and/or regional authorities for devising and implementing sustained action to prevent, reduce, control and/or eliminate marine degradation from land-based activities. The GPA aims at preventing the degradation of the marine environment from land-based activities by facilitating the duty of States to preserve and protect the marine environment.<sup>59</sup>

#### *National Implementation of the GPA*

A key component of the GPA framework is the development and implementation of the National Programmes of Action (NPAs) for the Protection of the Marine Environment from Land-based Activities (NPA). NPAs are iterative processes that call for the phased implementation of priorities identified through a cross-sectoral, participatory approach. These programmes provide a comprehensive yet flexible framework, to assist countries in fulfilling their duty to preserve and protect the marine environment from the major GPA pollution categories.

#### *Regional Implementation of the GPA*

In the Washington Declaration (Washington Declaration English), the Governments declared their intention to cooperate on a regional basis to coordinate GPA implementation efforts. Development of national and regional programmes of action is of primary importance. The UNEP Regional Seas Programme and the other regional seas programmes and organizations provide an integrated framework for national action programmes.

#### *Considerations of Blue Carbon in GPA-Marine to date:*

GPA-Marine recommends that States identify and assess problems related to the:

- nature and severity of problems in relation to: food security and poverty alleviation; public health; coastal and marine resources and ecosystem health, including biological diversity; and economic and social benefits and uses, including cultural values.
- severity and impacts of contaminants including sewage, persistent organic pollutants, radioactive substances, heavy metals, oils, nutrients, sediment mobilization and litter.
- physical alteration, including habitat modification and destruction, in areas of concern.
- sources of degradation, including: coastal and upstream point sources; coastal and upstream non-point (diffuse) sources; and atmospheric deposition caused by transportation, power plants and industrial facilities, incinerators and agricultural operations.
- the affected or vulnerable areas of concern such as critical habitats, habitats of endangered species, ecosystem components, shorelines, coastal watersheds, estuaries, special protected marine and coastal areas, and small islands.

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59 [http://www.gpa.unep.org/index.php?option=com\\_content&view=article&id=49&Itemid=27](http://www.gpa.unep.org/index.php?option=com_content&view=article&id=49&Itemid=27)