



Panama and Colombia Blue Carbon Preparedness

Report of the Panama City workshop, March 2014

Advanced draft (June 2015)



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The information in this workshop report is based on the discussion held in March 2014. They might not necessarily reflect the most up-to-date information on Blue Carbon in Panama and Colombia, but are a good indication of Blue Carbon activities in those two countries.

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About the Blue Carbon Initiative

The Blue Carbon Initiative is the first integrated program with a comprehensive and coordinated global agenda focused on mitigating climate change through the conservation and restoration of coastal marine ecosystems.
<http://thebluecarboninitiative.org/>

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Acronyms

ANAM*	Autoridad Nacional del Ambiente
ARAP*	Autoridad de Recursos Acuáticos de Panamá
BC	Blue Carbon
BCI	Blue Carbon Initiative
CATIE*	Centro Agronómico Tropical de Investigación y Enseñanza
CORALINA*	Corporación para el Desarrollo Sostenible del archipiélago de San Andrés, Providencia y Santa Catalina
EC	Environment Canada
IUCN	International Union for Conservation of Nature
INVEMAR*	Instituto de Investigaciones Marinas y Costeras
MADS*	Ministerio de Ambiente y Desarrollo Sostenible (Colombia)
STRI	Smithsonian Tropical Research Institute
UNFCCC	United Nations Framework Convention on Climate Change

*Spanish acronyms

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Executive Summary

There is now a wide consensus that carbon stored in the coastal ecosystems of mangroves, tidal marshes and seagrasses – has strong potential to be a transformational tool in the effective management, conservation and restoration of coastal ecosystems. The importance of this so-called ‘blue carbon’ depends on the amount of such resources that individual countries possess. Blue Carbon efforts and projects that are initiated and financed through carbon policies and funds should aim to use the climate change mitigation value of coastal marine ecosystems as a catalyst to support conservation, sustainable use, and restoration of these systems.

To discuss precisely this potential, a bi-national workshop was held in March 2014 with governmental, civil society, research and private sector actors from Panama and Colombia. The purpose of this workshop was to assess how prepared these two countries are to implement blue carbon activities and to develop an appropriate action plan, in the knowledge that:

- Well-managed and conserved coastal blue carbon ecosystems store and sequester significant amounts of carbon, thus supporting the mitigation of climate change, while at the same time safeguarding floral and faunal biodiversity. They are also main contributors to the so-called Blue Capital of countries (the entirety of marine and coastal ecosystems that provide economically significant goods and services).
- When degraded, coastal blue carbon ecosystems can aggravate climate change risks by releasing stored greenhouse gases (GHG) back into the atmosphere and providing fewer ecosystem services and resilience on the ground.

This report uses a “blue carbon preparedness” approach based on a work undertaken in Vanuatu, aimed at facilitating the implementation of blue carbon programmes and projects in different regions of the world, by better understanding the conditions required for successful implementation at the national level and through collaboration with the different stakeholders who would be involved in such processes.

Implementing Blue Carbon project thus requires a high level of integration and multi-stakeholder involvement: it is a complex task, but if done well,

bears many benefits and synergies. The road to success requires a clear understanding of local opportunities and potential barriers, which more often than not lie in the socio-economic and policy arena.

The workshop established the foundations for blue carbon projects in Colombia and Panama as part of valuing the blue capital of these countries. In so doing, it brought together the blue carbon experts of the region, it identified opportunities or associated issues to help fast track the development of blue carbon projects in Colombia and Panama, and it collected the basic information necessary to compile a first edition of a blue carbon preparedness report and action plan.

The Action Plan - the main output of the workshop - is summarised below in the form of 20 recommendations. The recommendations have been developed based on the discussions at the workshop (see section 5 for details).

The Action Plan is an initial attempt to describe the main activities needed to develop comprehensive Blue Carbon activities in Panama and Colombia. Further funds should be invested in the development and refinement of the below recommendations, starting by identifying appropriate stakeholders (government, NGOs, academia, etc.) who can follow-up and lead on specific recommendations (see recommendation #5).

RECOMMENDATIONS

INCREASE VISIBILITY AND AVAILABILITY OF BLUE CARBON INFORMATION

1. Prepare documentation, in Spanish, about the potential of Blue Carbon for countries of the area, within the context of all the ecosystem services provided by coastal ecosystems.
2. Provide and share national-level maps, inventories and assessments (as well as other relevant informations) of current blue carbon activities in Panama and Colombia (including mangroves, seagrasses and saltmarshes), as well as other coastal conservation efforts.
 - a. Unify existing information and make available in adequate format and in

relevant repositories such as the Clearing House Mechanism of the Convention on Biological Diversity (CBD).

- b. Use existing fora for outreach (such as the Marine Ecosystem Partnership).
3. Complement these efforts by initiating a quantitative assessment and estimation of the overall Blue Carbon stores in both countries. The consolidation of various data sources may require the use of a standard and shared methodology to provide a comparable national assessments.

IMPROVE COORDINATION WITHIN THE BLUE CARBON COMMUNITY

4. Launch an “umbrella” project in both countries that would unify existing relevant initiatives, increase synergies, and accordingly fill gaps and strengthen the definition of priorities (e.g. coastal management tasks / recommendations proposed here).
5. Create a regional sub-group of the Blue Carbon Initiative (for Central or Latin America) in order to better finetune global initiatives and projects with regional context and needs. This could be divided thematically e.g. general science (CATIE), ecosystem services (UNEP), communities, policies, IUCN.
6. Reinforce knowledge and understanding of financing mechanisms for blue carbon amongst field actors / governments and create a coordination hub to ensure timing and opportunities for new funding (e.g. GEF) are being tracked.

ENSURE STRONG POSITIONING OF BLUE CARBON AT NATIONAL LEVELS WITHIN BROADER CLIMATE CHANGE AND BIODIVERSITY DISCUSSIONS

7. Enhance communication efforts between national-level organisations working in blue carbon ecosystems (on data, field studies, etc) to share knowledge and priorities to ensure blue carbon is incorporated into wider climate change and biodiversity actions. In so doing, ensure that communication formats and lexicon are tailored for different audiences/ stakeholders – from decision-makers and

private companies, through to indigenous and local communities, etc.

8. Seek national-level opportunities to generate projects that combine both mitigation and restoration objectives with ecosystem-based adaptation in coastal ecosystems to allow for best use of synergies and “no regret” management interventions.

UNDERTAKE ANALYSIS TO REFINE RELEVANT POLICES AND LEGISLATION

9. Undertake national-level policy and legal analyses and studies, as well as community consultations, in order to clarify outstanding questions, including issues pertaining to land tenure and carbon ownership.
10. Develop, adopt or revise policy instruments related to coastal ecosystems in order to better encompass blue carbon requirements, and reinforce capacities and mandates to deliver integrated management of coastal areas.



Mangrove shoot nearly breaking the surface of the water. Christine Quigley/Marine Photobank

11. Identify and formalise a national-level technical agency to take charge of intra/inter-institutional coordination for blue carbon issues for each country, or identify an existing regional or international commission that could play this role (in order to avoid multiplication/duplication of commissions).
12. Incorporate blue carbon into national REDD+ efforts and if possible in the post-2015 agreements of the United Nations Framework Convention of Climate Change (UNFCCC), the scope of which currently only contemplates above-ground carbon.
13. Identify opportunities to develop a domestic carbon market, thus avoiding dependence on external funding and enabling private companies to participate on a voluntary basis.

ADVANCE CAPACITY BUILDING WITH LOCAL INVOLVEMENT

14. Ensure that each project or initiative related to coastal ecosystems includes, as relevant, a component related to blue carbon awareness and capacity building. This could be achieved by accommodating such needs within existing (or new) platforms for interinstitutional/intersectorial coordination in the field of environmental education and thereby ensuring that the blue carbon message is appropriately conveyed.
15. Ensure that blue carbon projects involve local/indigenous communities as well as local businesses from the early design stage, as well as in monitoring efforts (e.g. including proper training).
16. Identify a “champion” or several champions within local communities for blue carbon by linking to a personal story involving blue carbon that they and others can readily connect to. The intent is to trigger better involvement of local communities. Similar engagement with the private sector should also be envisioned.
17. Bring the private sector into a multi-sectorial dialogue with NGOs and scientists in order to jointly influence the public sector and policy setting bodies, and foster the integration of blue carbon into regional strategies. This could take place through already existing committees e.g. Panama interdisciplinary Wetlands Committee (Rosabel Miró President : rosabelmiro01@gmail.com and info@audubonpanama.org). Discussions should be started with key industrial sectors (see table 7).
18. Encourage authorities to generate guidelines / maps targeted at the private sector for defining priority coastal ecosystems where the private sector should invest in conservation or restoration (e.g. in the context of biodiversity offsets and other compensation schemes for environmental impacts).
19. Encourage development of a framework for “green products” e.g. label, green stamp, state recognition and promotion of exemplary companies, which would demonstrate the value of conservation of marine ecosystems and blue carbon.
20. Seek win-win situations for public-private or private-private partnerships, where company performance (lower energy consumption, better image, carbon efficiency, etc) can be improved while also benefiting ecosystems. Identify a “champion” (an enterprise or an individual) and communicate through telling positive stories that speak of mutual benefits.

From the action plan it can be seen that this workshop was a first and successful step towards developing a blue carbon strategy in Panama and Colombia. It was the first event that brought together blue carbon experts from the regions with other stakeholders. It achieved significant progress in developing a shared national-scale outlook in favour of the conservation of blue carbon habitats. It assessed how prepared Panama and Colombia are to implement blue carbon projects, and the action plan represents significant progress in identifying the ‘missing steps’ that would otherwise be barriers to future implementation.

ACTIVATE PRIVATE SECTOR ENGAGEMENT

17. Bring the private sector into a multi-sectorial dialogue with NGOs and scientists in order to jointly influence the public sector and policy setting bodies, and foster the integration of blue

1. Introduction to Blue Carbon

Coastal “blue carbon” – carbon stored in the coastal ecosystems of mangroves, tidal marshes and seagrasses – has strong potential to be a transformational tool in the effective management, conservation and restoration of coastal ecosystems. These natural systems are being degraded and destroyed at a rapid pace, resulting in globally significant emissions of carbon dioxide into the ocean and atmosphere and contributing to climate change. With appropriate and timely action, coastal “blue carbon” can increase recognition of the importance of coastal systems for climate change mitigation, leverage improved management and regulation of coastal areas and provide a basis for incentives, including financial mechanisms, to conserve or restore these systems.

The growing understanding and rapid increase of a suite of activities in the field of “blue carbon” (science, policy, carbon projects, etc - see <http://thebluecarboninitiative.org/>) have now triggered the interest from several countries to endeavour their national blue carbon mitigation potential. This report presents a rapid assessment of blue carbon potential in Panama and Colombia.

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 (CO₂) 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 action. Several countries are developing policies and programmes in support of sustainable development through initiatives that reduce the carbon footprint associated with the growth of their economies, including actions to conserve and sustainably manage natural systems relevant to the UNFCCC and the Reducing Emissions from Deforestation and Forest Degradation (REDD+) mechanism.

It is now known that coastal ecosystems, such as tidal marshes, mangroves and seagrass meadows, similarly provide carbon sequestration, and store large quantities of carbon in both the plants and in the sediment below them. Occupying just 2% of seabed area, these vegetated wetlands represent 50% of carbon transfer from oceans to sediments (Duarte, Middelburg &



Hardy head silversides in seagrass meadow. Richard Unsworth/Marine Photobank

Caraco 2005). Unlike forests and peatlands, they achieve this by a sustained sequestering of carbon, which does not reduce in effectiveness over time if these ecosystems are free to respond to changes in sea level. As a group of wetland types that have a global occurrence (8% of remaining global mangroves are found in Central America), they therefore create new opportunities and infer new responsibilities on many nations that have them within their marine waters.

Per unit area, blue carbon coastal ecosystems are now understood to be significantly better at trapping and storing carbon than their terrestrial counterparts (Figure 1). This is because the carbon laid down through natural processes is packed away more tightly (higher bulk density), and because the salinity of seawater can hinder the production of other gasses associated with decomposition of vegetation, such as methane, which are more powerful greenhouse gases than CO₂ (Table 1). Methane has approximately 21 times the greenhouse gas potential of CO₂.

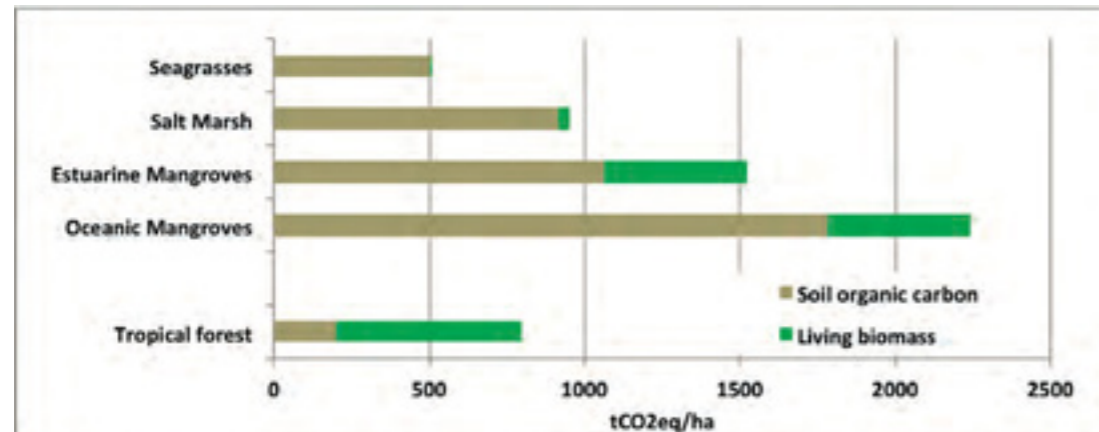


Figure 1. Global averages for carbon pools (soil organic carbon and living biomass) of focal coastal habitats. Tropical forests are included for comparison. Only the top meter of soil is included in the soil carbon estimates. Source Murray et al. (2011): Green Payments for Blue Carbon. Economic Incentives for Protecting Threatened Coastal Habitats. Nicholas Institute for Environmental Policy Solutions Report. NI R 11-04.

Given their carbon function, coupled with many other provisioning and regulating ecosystem services, there is growing evidence and scientific consensus that the management of these coastal ecosystems has strong potential to be a transformational tool in sustainable livelihoods, climate resilience and a valuable part of global natural carbon management. Unfortunately action needs to be taken fast as these blue carbon ecosystems are being degraded and destroyed faster than forests and peatlands. Between 1980 and 2005, about 20% of the total global area of mangroves has been lost (Spalding, Kainuma & Collins 2010), whilst nearly 30% of seagrass meadows have been lost globally since the 19th century (Waycott et al 2009), with an upsurge in recent decades. Large-scale losses from clearing of coastal ecosystems for coastal development and development as well as piecemeal losses and degradation of suitable habitat due to pollution are the major causes.

Preventing the loss of these ecosystems is critical since, in addition to the biodiversity values they support, these habitats provide a range of other significant benefits for climate change adaptation, local livelihoods, tourism and culture. These benefits include, but are not limited to, providing protection from storms and prevention of shoreline erosion, regulation of coastal water quality and providing a habitat and nurseries for numerous marine species.

At the country level the importance of blue carbon for Panama and Colombia can be evaluated from a number of different perspectives:

- **The political dimension** – does blue carbon provide new opportunities for the Governments of Panama and Colombia to show and sustain lead-

ership at both the regional and international level on climate change mitigation and coastal conservation?

- **The governance and management perspective** – would including coastal carbon management in environmental decision making support the development of better governance systems and lead to better decision making on development and planning?
- **The community stakeholders point of view** – could embracing blue carbon lead to enhanced sustainable resource management and better recognition of the importance of community contributions and customary stewardship?
- **The biodiversity conservation and protection angle** – does recognising the carbon carrying capacity of coastal habitats make it more likely that they will be protected and better managed?
- **The economic viewpoints** – would including blue carbon provide new economic opportunities and provide increased potential in other areas involving the private sector, as well as become a critical component of a low carbon economy?
- **The sustainable tourism perspective** – does blue carbon implementation support, enhance or create tourism opportunities?

Consideration of these different perspectives formed the basis for discussion at the workshop, which deliberated on the benefits that blue carbon could bring to Panama and Colombia and the issues that need to be taken into account and steps that should now be taken.

Wetland type	Carbon sequestration	Methane production	Net GHG sink
Mudflat (saline)	Low	Verylow	Low to medium
Salt Marsh	High	Verylow	High
Freshwater Tidal Marsh	Very High	High to Very High	Neutral or variable
Estuarine Forests	High	Low	High
Mangroves	High	Low to High*	Low to High*
Seagrass Meadows	High	Low	High

* depends on salinity

Table 1. Summary of potential GHG reductions due to soil building in coastal wetlands (Philips Williams & Associates Ltd & Science Applications International Corporation (SAIC) 2009).



As sea level rises more rapidly with global warming, marshes must migrate inland to survive, but urban development will prevent this on many coasts. © Olivia Yu

2. Workshop description

3.1 AIMS AND OUTCOMES OF THE WORKSHOP

The purpose of this workshop was to collectively establish the foundations for blue carbon projects in Colombia and Panama as part of valuing the blue capital of these countries.

The workshop aimed at:

- Bringing together the blue carbon experts of the region and people that can advise on relevant issues.
- Identifying opportunities or associated issues for fast tracking the development of blue carbon projects in Colombia and Panama.
- Collecting the information necessary to compile a blue carbon preparedness report and associated action plan.

overview of international policy opportunities for blue carbon.

Following the plenary presentations, different working group sessions were conducted in order to promote interaction between the participants and brainstorming.

The themes of the different working groups are listed below:

- WG 1** Including Blue Carbon into existing coastal management activities
- WG2** Including blue carbon into existing forestry activities
- WG3** Carbon strategy at country level
- WG4** Local community engagement
- WG5** Private sector perspective: Economic value/valuation of Blue Carbon Habitats
- WG6** Education and awareness raising
- WG7** Explore funding opportunities and complementarities with existing donor initiatives

For each working group, the discussion was structured as follows:

1. List of current activities / initiatives
2. Gaps in existing activities / initiatives
3. Opportunities / Barriers
4. Priorities for action

The whole workshop was focused on identifying key elements that served, on the one hand, to create a blue carbon preparedness framework with an associated Action Plan, and on the other, to highlight the strategic importance of coastal ecosystems in general and the need to use all strategies available that favour their protection.

Details of the agenda can be found in Annex 2.



3.2 WORKSHOP DETAILS

The workshop convened experts in key areas of coastal science, environmental policy and economics, marine conservation, and project implementation from within the climate change, marine and coastal communities of both countries (see Annex 1 for the list of participants). Private sector representatives from companies with an interest in climate change also participated.

Presentations in the initial plenary session provided an overview of the state of the scientific knowledge of coastal carbon storage and sequestration, and an

3. Blue Carbon habitats in Panama and Colombia

4.1 PANAMA

4.1.1 MANGROVES

Panama lies at the center of the diversity for the western mangrove flora, with 11 tree species. The largest mangrove areas are found on the south coast, where there are high tidal ranges and many large rivers. A much lower total mangrove area can be found in the

northern (Caribbean) coast, experiencing a more narrow tidal range. The largest trees can be found on both the landward and seaward margins (up to 5m), with lower tree heights across the remaining tidal frame.

Table 2. Panama has 42 MPAs, of which 17 include mangroves, with different mangrove species as listed below
Source: ANAM-ARAP Autoridad Nacional de Ambiente y Autoridad de los Recursos Acuáticos de Panama. 2013. Manglares de Panama : importancia, mejores practicas y regulaciones vigentes. Panama : editora Novo Art, S.A., XXpp

Nombre común	Nombre científico	Atlántico	Pacífico	Nivel de amenaza*
Helecho de manglar	<i>Acrostichum aureum</i>	✓	✓	Preocupación menor
Helecho de manglar	<i>Acrostichum danaeifolium</i>	✓	✓	Preocupación menor
Mangle marica	<i>Tabebuia palustris</i>	-	✓	Vulnerable
Alcornoque	<i>Mora celtifera</i>	-	✓	Vulnerable
Mangle salado	<i>Avicennia bicolor</i>	-	✓	Vulnerable
Mangle negro	<i>Avicennia germinans</i>	✓	✓	Preocupación menor
Mangle botón	<i>Conocarpus erectus</i> L.	✓	✓	Preocupación menor
Mangle blanco	<i>Laguncularia racemosa</i>	✓	✓	Preocupación menor
Mangle piñuelo	<i>Pelticiera thlaspiifera</i>	✓	✓	Vulnerable
Mangle rojo	<i>Rhizophora mangle</i>	✓	✓	Preocupación menor
Mangle caballero	<i>Rhizophora racemosa</i>	-	✓	Preocupación menor

* Según la Lista Roja de Especies Amenazadas de la Unión Internacional para la Conservación de la Naturaleza IUCN, versión 2012.2.
Fuente: Atlas mundial de los manglares Spalding et al., 2010.



Figure 2. Mangrove distribution in Panama

Data layer from the World Atlas of Mangroves. In Supplement to: Spalding et al. (2010a). Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: data.unep-wcmc.org/datasets/22. Spalding M, Kainuma M, Collins L (2010a). World Atlas of Mangroves. A collaborative project of ITTO, ISME, FAO, UNEP-WCMC, UNESCO-MAB, UNU-INWEH and TNC. London (UK): Earthscan, London. 319 pp. Spalding M, Kainuma M, Collins L (2010b).

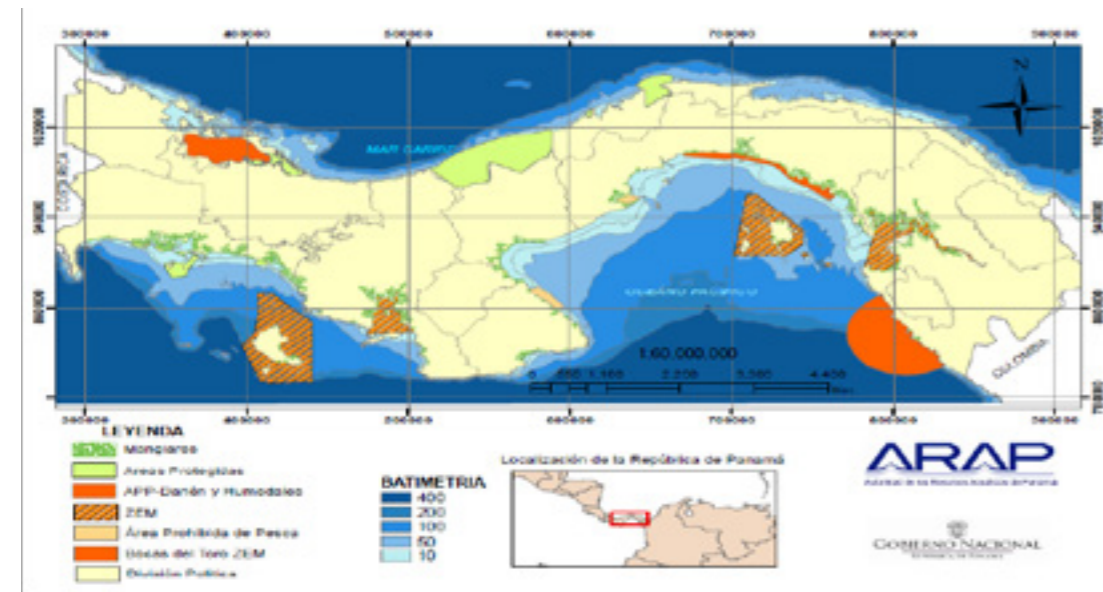


Figure 3. Map showing the spatial distribution of mangroves overlaid with Panama's protected areas

Mangroves play an important role for supporting fisheries, especially shrimps. But they are also harvested for timber, charcoal and fuelwood in some areas.

Some legal protection for mangrove exists. There is a minimum diameter for mangrove tree harvesting, and environmental impact assessments are required for all new developments affecting mangroves. There are several protected areas along the Panamanian coast, including four Ramsar sites and three World Heritage sites.

Text taken from and for further information see the *World Atlas of Mangroves*, by Spalding et al. 2010.

4.1.2 SEAGRASSES

In Panamá, seagrasses are most abundant and diverse on the Caribbean coast, with 4 species that belong to 4 genus, versus the Pacific Ocean where 2 species have

been identified, from which *Halodule wrightii* Arscherson, is also present in the Caribbean.

While their distribution and extent are not yet fully defined, and little data is available, most seagrass habitats are represented on the map shown below (source ARAP presentation). So far there has been no overall assessment of the conservation status of seagrasses, but experts affirm that the seagrass' state overall is good, although in certain areas (eg. Bocas del Toro and Kuna Yala) some specific changes have been detected due to housing construction in the vicinity of these natural formations and impacts generated by the inhabitants nearby. To summarize, the main alterations faced by seagrasses are due to: sewage, disposal of domestic and industrial waste; sediment erosion; turbulence due to navigation; chemical contamination; natural events such as storm surges, tsunamis, tidal waves, among others; tourism and urban development.



Figure 4. Little data is available for Seagrass distribution in Panama, but most of habitats are represented on the map left (source ARAP presentation)

CARIBBEAN	PACIFIC
(1) <i>Halodule wrightii</i> (Cymodoceaceae) (seagrass); (2) <i>Syringodium filiforme</i> (manati grass); (3) <i>Halophila decipiens</i> and (4) <i>Thalassia testudinum</i> (hierba marina) (Hydrocharitaceae)	(1) <i>Halodule wrightii</i> (Cymodoceaceae) (seagrass); (2) <i>Halophila baillonii</i> (seagrass) (Hydrocharitaceae)

Table 3. Seagrasses species in Panama (adapted from Gobierno Nacional et al. 2010).

4.2 COLOMBIA

4.2.1 MANGROVES

Both the Pacific and the Caribbean coastlines of Colombia show extensive mangrove areas. Dwarf and shrubby fringing mangroves can be found on the eastern Caribbean coastline. The more extensive mangrove areas can be found towards the west. Most areas however are being degraded due to changes in hydrology flows. The largest trees (11 – 28 m) can be found south of Cartagena. Overall, the Pacific coast comprises 75% of the mangroves in Colombia.

Artisanal and commercial fisheries are of importance, in some areas industrial and artisanal salt pans as well as agricultural fields have replaced some mangrove areas.

Despite some localized natural increases and replanting efforts, mangroves continue to decline in many areas. Several large tracts of mangroves are not yet protected.

Text taken from and for further information see the *World Atlas of Mangroves*, by Spalding et al. 2010.

4.2.2 SEAGRASSES

In Colombia, seagrasses are restricted to the Caribbean Coast, where six species have been registered: *Thalassia testudinum*, *Syringodium filiforme*, *Halodule wrightii*, *Halophila decipiens*, *Halophila baillonii* and *Ruppia maritima*. The seagrass beds in the Colombian Caribbean cover an area of 43,223 ha, from which a little over 80% is concentrated in La Guajira Peninsula and the insular area, and less than 5% is located in the San

Andrés archipelago, Providencia and Santa Catalina (Díaz et al, 2003). Regarding ecosystem conservation efforts, the formulation of the 1450 Act in 2011 (Chapter 5, Article 207), included the protection of seagrass beds in the country, taking into account the locations described in the study of Díaz et al. (2003). As part of this Act, the scope of protection of this ecosystem expanded in various sectors of the Colombian Caribbean (INVEMAR, 2012).

For more information: Díaz, J.M., L. M. Barrios y D. I. Gómez-López (Eds). 2003. Las praderas de pastos marinos en Colombia: Estructura y distribución de un ecosistema estratégico. INVEMAR, Serie Publicaciones Especiales No. 10, Santa Marta, 160 p.

INVEMAR 2012. Informe del estado de los ambientes y recursos marinos y costeros en Colombia. Año 2011. Serie de Publicaciones Periódicas No. 8. Santa Marta. 203 p.

Other links :
 Original Atlas: <http://www.invemar.org.co/download-FILE.jsp?id=2040&from=1>
 Maps: <http://www.invemar.org.co/downloadFILE.jsp?id=2116&from=1>
 Other related documents: <http://www.invemar.org.co> (in the link « documents »)



Figure 5: Mangrove distribution in Colombia

Data layer from the World Atlas of Mangroves. In Supplement to: Spalding et al. (2010a). Cambridge (UK):

UNEP World Conservation Monitoring Centre. URL: data.unep-wcmc.org/datasets/22.

Spalding M, Kainuma M, Collins L (2010a). World Atlas of Mangroves. A collaborative project of ITTO, ISME, FAO, UNEP-WCMC, UNESCO-MAB, UNU-INWEH and TNC. London (UK): Earthscan, London. 319 pp. Spalding M, Kainuma M, Collins L (2010b).

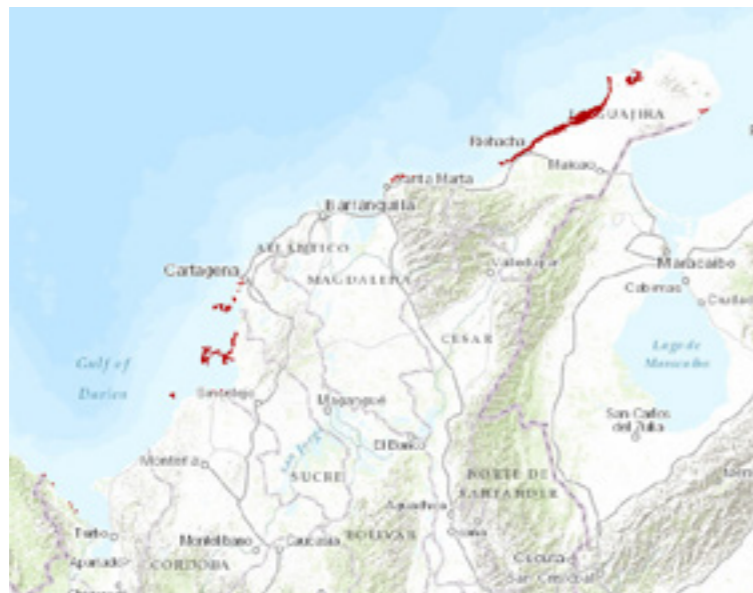


Figure 6: Seagrass distribution in Colombia

Green EP, Short FT (2003). World atlas of seagrasses. Prepared by UNEP World Conservation Monitoring Centre. Berkeley (California, USA): University of California. 332 pp. UNEP-WCMC, Short FT (2005). Global distribution of seagrasses (version 2). Updated version of the data layer used in Green and Short (2003). Cambridge (UK): UNEP World Conservation Monitoring Centre. URLs: data.unep-wcmc.org/datasets/10 (polygons) and data.unep-wcmc.org/datasets/9 (points)

4. Blue carbon preparedness in Panama and Colombia

Based on the discussions and outputs of the working groups, the preparedness diagnosis is built on 6 categories:

1. Knowledge gaps and availability
2. Coordination within the blue carbon community
3. Positioning of blue carbon within broader climate change and coastal management issues
4. Policies and legislations
5. Awareness raising, capacity building and local involvement
6. Private sector

The following sections summarize the main discussion points concerning the 6 defined areas/categories.

5.1 KNOWLEDGE GAPS AND AVAILABILITY

For the two countries, a clear definition is required of blue carbon ecosystems and the characteristics that need to be defined for an effective blue carbon project – this requirement is not surprising given that the workshop represents the first time the issue had been considered jointly by national experts from both countries despite a number of individual projects already being undertaken (see 5.2 below).

In discussing blue carbon ecosystems, the workshop noted that such ecosystems offer a variety of ecosystem services which do not stop at climate change mitigation and adaptation, but stretch to sources of income, food, wood, etc. The participants considered that an approach using ecosystem services valuation appeared a good way to encompass, assess and communicate all these values. However, they noted that the estimation of the financial value of mangrove varies considerably (depending on the location, methods and timescale) and presents a partial picture that does not lead to a “panacea” solution.

Some mangrove areas show high economic values with more than \$1.700 US per hectare. Small areas, and areas used for subsistence, often show lower economic

values but are crucial to the livelihoods of many. Neither Panama nor Colombia has currently comprehensive economic evaluation assessments of their mangrove areas. Data is even scarcer for seagrasses and salt marshes. Ecosystem service valuation can both be used as a decision-making tool for conservation, as well as used as a communication tool (valuation results).

A detailed inventory allowing for aggregation of carbon data (to get the full picture for both countries) is currently not available. A major problem is that different assessment methodologies have been used for different carbon projects. A clear global picture of carbon quantities and distribution at the country scale is therefore lacking. There are inventories of mangroves and wetlands, but not of seagrasses or saltmarshes. Notwithstanding, efforts to develop an inventory of strategic coastal areas is underway in both countries.

At the local scale, coastal ecosystems are more valued and recognized for their climate change adaptation than their mitigation potential. This duality was considered a strength, whereby an “abstract” carbon sequestration /sink potential could make more sense to local authorities, local leaders and artisanal productive sectors if also viewed through a climate change adaptation lens. Participants felt this argument could be used as a means to prioritise blue carbon areas in term of action and facilitate implementation of some projects due to greater local buy-in and political support.

Any practical guidance needs to be adapted to the local context: In theory it is not hard to envisage what a blue carbon project could look like. However, since no detailed guidelines for the design or implementation of such projects currently exist in either country, it is still difficult to put theory into practice. Whereas general guidelines applicable to a local context would be useful, any project should however follow a flexible approach to project development, one that best suits the varying conditions and objectives of potential interventions around the world. This said, common global metrics should nevertheless be developed for monitoring and evaluation.

5.2 COORDINATION WITHIN THE BLUE CARBON COMMUNITY

Blue carbon work has been undertaken in both countries (see table below) but there is currently a clear lack of coordination between these different projects. The result translates into lost opportunities for convergence and synergies. This occurs both in terms of

compatible scopes and methodologies, and of the efficient use of funds and awareness raising. The participants concluded that there is a need for increased coordination at country and regional level as well as for the development of synergies amongst existing and planned projects, actively seeking means to either align or cross-fertilize efforts.

From the perspective of opportunities for funding of new projects, the workshop concluded that scarcity of funding is not the main barrier. Means for financing blue carbon projects are available, mainly through international climate change financing, and good technical/scientific capabilities exist in the region. It may even be possible to create a REDD+ methodology for

each country that could frame blue carbon pilot efforts within REDD+ national programs and the wider climate change agenda.

A number of barriers however do exist for funding of new projects. These relate to the lack of: a) knowledge by most actors on how to access available funding

Name	Location	Partners	Period	Reference
Integrated Coastal Zones Management and Sustainable Mangement of Mangroves in Guatemala/ Honduras/Nicaragua	Guatemala, Honduras, Nicaragua	MARN, SERNA, MARENA, PNUMA	2010-2013	http://www.pnuma.org/manglares/boletines/Boletin%20marzo2012 http://www.pnuma.org/manglares/documentos/Sistematizaci%C3%B3n%20Proyecto%20Manglares.pdf
Carbon map of the Republic of Panama	Panama	Stanford University, STRI, Autoridad Nacional del Ambiente Panama (ANAM)	2013	https://carnegiescience.edu/news/first_highresolution_national_carbon_map—panama http://www.stri.si.edu/english/research/features/carbon.php http://www.cbmjournal.com/content/8/1/7
Identification and Diagnostic of the Strategic Environmental Services of Coastal and Marine Ecosystems (characterization of ecosystem services supply and demand)	Colombia	Ministry of Environment and Sustainable Development, ECOVERSA	October 2012 and February 2013	http://www.ambiente.gov.ar/archivos/web/PCCGDBM/File/APMC/Financiacion/Documento%20Estrategia%20PSA.pdf
Colombian Marine Protected Areas Subsystem (GEF-SAMP): Component 2: Finance Strategies for Marine Protected Areas - Methodology for reducing deforestation and forest degradation: Pilot in Caribbean Mangroves in one MPA (calculations of carbon storage in mangroves)	Colombia	Marine and Coastal Research Institute “José Benito Vives de Andrés” (INVEMAR), PNUD, CARBONO & BOSQUES, CVS (Regional Environmental Corporation), GEF, local communities	2011-2016	http://www.webmeets.com/files/papers/wcere/2014/995/Maldonado%20&%20Zarate%202014_WCERE.pdf http://www.invemar.org.co/redcostera1/invemar/docs/11128Plan_de_accion_INVEMAR_2014.pdf http://cinto.invemar.org.co/samp/sobre-el-gef-samp/ http://www.invemar.org.co/pcategorias.jsp?idcat=158 http://cinto.invemar.org.co/samp/ssd-del-samp/
Determining value of ecosystem services for ecotourism	Panama	CATIE, MARVIVA, David Montijo		http://www.marviva.net/index.php/en/2011-12-15-15-48-47/science-and-communities/lines-of-action/panama http://www.marviva.net/index.php/en/component/content/article/34-marviva-information/515-take-action http://web.catie.ac.cr/catie/informe_anual/Pag29-33.PDF
Carbon Sinks Protection (mitigation + adaptation) (demonstration pilot)	Panama (Chiriqui)	UNDP ANAM+ARAP WI TNC	2012 to date	http://thebluecarboninitiative.org/wp-content/uploads/Profiles-in-Blue-Carbon-Field-Work_NO-contacts_revised-May-131.pdf http://www.marineclimatechange.com/marineclimatechange/bluecarbon_Ecuador1_files/Wetlands%20International%20-%20Blue%20Carbon%20presentation%20Guayaquil%2010Jul12.pdf
BC assessment UNEP ICI	Panama (Chiriqui-Chame)	ARAP-ANAM-Wetlands International, TNC	Starting	
BC assessment in mangroves (AECID)	Bahia de Panama	Universidad de Sevilla (UPO) UMIP	2011- 2012	http://www.arap.gob.pa/transparencia/investigacion/manglarespanama.pdf
Algae cultivation for carbon storage (ARAP)	Panama (Bocas del Toro-Colon)	ARAP	2007 to date	
Restoration of abandoned and devastated shrimping areas and attempted reconstitution of mangrove + creation of artificial reefs	Panama	ARAP	2010 to date	
Estimation of BC in Darien mangroves	Panama (Darien)	USAID TNC		
Carbon balance in Andalucía coastal municipalities	Cartaya, Almeria, others	IMA(Informe de medio ambiente en Andalucía)	2008 to date	http://www.juntadeandalucia.es/medioambiente/site/ima/tem.5893969315ab596f7bbe6c6f5510e1ca/?vgnextoid=f4aebb614b03a310VgnVCM1000001325e50aRCRD&vgnnextchannel=a25cd127a1b09310VgnVCM2000000624e50aRCRD&lr=lang_es

Name	Location	Partners	Period	Reference
Creation of artificial reefs as a mean of compensation and mitigation (ARAP)	Panama	ARAP	2014 -	
Inventory of coastal wetlands)	Panama	RAMSAR	Starting	http://www.ramsar.org/pdf/Ramsar_SGF_Portfolio_2014_20.pdf
Carbon monitoring in mangroves	Panama (specific to Darien region)	USAID + CATIE + TNC + ANCON		
Bio-REDD+ - Pacific	Colombia	USAID Ministry of Environment and Sustainable Development and others: http://www.bioredd.org/?q=galeria-aliados	2012-2015	http://www.bioredd.org/?q=en http://bioredd.org/projects/
National Forest Maps and Inventory	Panama (FAO + ANAM)		2014	http://www.un-redd.org/Newsletter2014August/PanamaForestInventoryVideo/tabid/794004/Default.aspx
"WAVES" project (wealth accounting and valuation of ecosystem services)	Colombia	World Bank, Department of National Planning (DNP), and others: National Department of Statistics (DANE), Ministry of Environment and Sustainable Development (MADS), Institute for Environmental Studies (IDEAM) and General State Controllership (CGR)	2011 to date	https://www.dnp.gov.co/Programas/Ambiente/WAVES.aspx http://www.wavespartnership.org/en/colombia https://www.dnp.gov.co/Programas/Ambiente/WAVES.aspx
Inventory of carbon sinks (San San Pond Sak)	Panama	STRI INDICASAT, University of Nottingham		https://repository.si.edu/bitstream/handle/10088/22005/stri_Global_Chang_Biol_19_3775-3789.pdf?sequence=1&isAllowed=y http://etheses.nottingham.ac.uk/2265/1/Emma_Wright_final_thesis_October_2011_.pdf
Coral Reef and Climate Change Programme	Panama	STRI	2012	https://scripps.ucsd.edu/news/2927 http://www.stri.si.edu/sites/esp/mesp/reef_monitoring_intro.htm http://smithsonianscience.org/2013/04/human-shadow-cast-over-the-caribbean-slows-coral-growth/
National Wetlands Policy	Panama	Ramsar	2012	http://www.ramsar.org/cda/en/ramsar-news-latest-earthdaypanama/main/ramsar/1-26-76%5E25706_4000_0__
Mangrove project Chiriquí Province	Panama			
Regional Training Plans (plan to include BC)	Panama			
Investigation SMITS on mangroves, peatlands (Bocas del Toro)	Panama			
GHG balance in mangrove areas with different conservation status (Ciénaga Grande de Santa Marta)	Colombia	INVEMAR	2007-2012	http://www.invemar.org.co/noticias.jsp?idcat=105&id=658&pagina=2 https://www.google.com.ec/?gfe_rd=cr&ei=-0CbU5XVI8zO8gfKyIHYDQ&gws_rd=ssl#q=Balance+gases+efecto+invernadero+manglares
Finance Strategies for Marine Protected Areas	Colombia	INVEMAR		
Integrated Management of Coastal zones (MIZC), as part of the National Environmental Policy for the sustainable development of oceanic spaces and coastal and insular zones of Colombia (PNAOCI)	Colombia	INVEMAR Ministry of Environment and Sustainable Development (PNAOCI)	2007 to date	http://www.invemar.org.co/redcostera1/invemar/docs/9328Plegablemizc.pdf http://www.invemar.org.co/redcostera1/invemar/docs/IEARMC%202012_PDF.pdf http://www.minambiente.gov.co/documentos/4268_161009_polit_zonas__costeras_pnaoci.pdf
Marine Environmental Information System: Thematic cartography of strategic coastal and marine ecosystems	Colombia	INVEMAR	1996 to date	http://siam.invemar.org.co/siam/index.jsp http://www.invemar.org.co/redcostera1/invemar/docs/mec/ecosistemas_continental_ costeros_y_marinos.pdf http://www.invemar.org.co/noticias.jsp?id=3458
Mangrove deforestation evaluation (Finance Strategy for Marine Protected Areas)	Colombia	INVEMAR		http://cinto.invemar.org.co/samp/
Pilot project for carbon storage in mangroves on Colombian Pacific coast (Malaga MPA)	Colombia	Marine and Coastal Research Institute "José Benito Vives de Andrés" (INVEMAR), CARBONO & BOSQUES, Fundación Natura, Local communities	2014-date	

Table 4. Blue carbon and blue carbon related initiatives and projects in Panamá and Colombia, and region.

sources and pursue competitive project process, b) a baseline to assess the carbon sequestering capability of these ecosystems, and c) a dedicated workforce. In addition, there was a concern that dependency on REDD+ sources of funding alone could prove short-sighted.

5.3 POSITIONING OF BLUE CARBON WITHIN BROAD-ER CLIMATE CHANGE AND COASTAL MANAGEMENT ISSUES

The participants discussed the positioning of blue carbon within the broader context of coastal management. They highlighted the fact that the right to development can still be seen as contradictory with conservation, but supported the notion that blue carbon could be used to demonstrate how low carbon activities can be conducive to both. To do this though, there is a need to define optimal actions where adaptation, mitigation and development are all achieved (central meeting point of 3 circles). Further work is needed to better define this win-win area but participants concluded that blue carbon may be a well positioned option on both fronts.

In taking forward blue carbon work, clear objectives and stakeholder expectations should be identified early in the project planning process. Knowing that carbon markets are subject to much fluctuation and have yet to fully consolidate, participants felt that it is important not to oversell the potential financial viability of a blue carbon project. Expectations regarding carbon credits may be overinflated. This is another reason to stress the “no regret” adaptation values of a blue carbon project in addition to its emissions mitigation objectives. Project planning and implementation processes must include constant engagement with stakeholders to keep partners informed about project progress, especially regarding policy and management activities.

When implementing projects, there is a clear need to carefully focus on decision making, to ensure that the right decisions and information are available at the right times to make it actionable i.e. give the right information to the right person to take a more assertive decision. The emphasis from the onset should be to focus on understanding what decisions are needed and which information is relevant to support such decision processes, rather than producing unfocused information in the hope it will be useful. So in essence, knowing which decisions need to be targeted and how to shape the information appropriately is key.

In order to effectively engage the private sector in blue carbon, the workshop identified that there is a need to build a real business case. This should include language and climate change concerns that speak to business people from their business perspective (e.g. explaining to the airport that it is in their financial interest to protect their lands from flooding). Banks and the insurance sector were identified as possible decisional target groups for awareness raising and seeking partnerships because they define criteria (and hence conditions) for investments.

5.4 POLICIES AND LEGISLATIONS

Discussions on policies and legislation identified that from the perspective of implementing blue carbon, gaps and overlaps in policies and legislation exist, especially in Panama, that could hinder the uptake or upscaling of blue carbon projects. There is a lack of coordination inside and between relevant institutions. The relevant policies that do exist are not well integrated and in fact work in silos (especially at the frontier between sea and land).

Most critically, there is a lack of policy and legal instruments for integrated coastal management especially in Panama (sustainable management, restoration, conservation). Where policies exist, there are nevertheless gaps in implementation measures. On the positive side, participants felt that there is an opportunity to incorporate blue carbon in the ongoing development of REDD+ strategies in both countries. However they felt that REDD+ should not be seen as the only option. The development of local carbon credit schemes may be an interesting opportunity having been already tried in Colombia.

Last but not least, a central issue dominates above all others in terms of barriers to progress, and that is the current lack of clarity about land ownership, and therefore who is responsible for the stored carbon.

5.5 AWARENESS RAISING, CAPACITY BUILDING AND LOCAL INVOLVEMENT

To take blue carbon forward in both countries, capacity building was seen as a key issue and should be prioritized across all levels. This ranges from field scientists and local community organizations to the private sector and government representatives. In developing capacity, participants felt that attention should be paid to understanding the public as end users (i.e. the different

LOCAL COMMUNITIES IN PANAMA	
What are the current practices/uses ?	<ul style="list-style-type: none"> Each coastal community have different activities/resources : maritime use, infrastructure, fishing, ganadería, extracción de cáscara, actividades agropecuarias, transformación de usos de suelos (acuicultura, turístico), acaparamiento de tierras, protección, vigilancia, reforestación, apicultura, coconut oil, wood/ carcoal, fishing, drug traffic, ecotourism, ports, Current activities are not integrated within state decision making pathways/framework. Many initiatives from NGOs, but risk of saturation/duplication of donors/projects/consultants with non specific/synergetic activities. No communication between the different initiatives in the country, resulting in a lack of synergy and possible saturation of different stakeholders.
How to ensure greater involvement of the communities?	<ul style="list-style-type: none"> Involve local communities in design of MPAs Promote a culture participation at all levels Be sure to have representative participation of different genders and ethnic groups (representativity) Institutions and authorities should strengthen their abilities to interact with communities Involve local communities in decision making at all levels of the decision making pathways Promote a culture of stakeholder participation at all levels (coordination between institutes, reporting, etc) Direct benefits (profit, quality of life, etc.)
What are the needs for creating more capacity?	<ul style="list-style-type: none"> Education according to academic levels Strengthen institution knowledge to better manage functions of ecosystems There needs to be a consensus through dialogue There is no policy setting that really relied on citizens participation Strengthen the community group leaders Coach and support the community based organisation, through gap analysis studies, teachings and involvement of NGOs (conflict solving, entrepreneurship, technical capacities, building networks, etc) Integration in already existing teaching programs, at different levels Multidisciplinary approaches to minimise conflicts

Table 5. Local communities in Panama - Awareness raising, capacity building and local involvement

LOCAL COMMUNITIES IN COLOMBIA	
What are the current practices/uses ?	<ul style="list-style-type: none"> • Forest use (wood, firewood, charcoal) • Fisherie • Shellfish harvesting • Communitary tourism and large-scale tourism • Aquaculture • Landfills for infrastructure development • Solid and liquid waste disposal • Drainage areas for land reclamation • Hunting • Recreation and tourism • Education • Research • Agriculture • Transportation • Recovery / Restoration • Protected areas management
How to ensure greater involvement of the communities?	<ul style="list-style-type: none"> • Involvement of the community from the beginning of land-use processes • Clarify who owns the land • Define/revise the participation mechanisms • Help communities to define their own objectives, creating a dynamic and constructive space with the communities • Improving public conditions • Clarify/regulate the previous consultation processes as part of the participation • Education/Training • Local communities participation (afro, indigenous, etc.) in carbon rights issues • Generation of productive livelihood alternatives
What are the needs for creating more capacity?	<ul style="list-style-type: none"> • Train the trainers, then train the communnities and ensure the trainings achieve the desired outcomes • Capacity building through associations, and recognising autochtonous knowledge/coustumes • Local management of natural resources (?) • Identify and promote « local promoters/champions » and Involve people form the start so that they become ambassadors/ conservators of their own project/ecosystem • Create capacities also beyong mangroves (e.g. seagrasses) • Involve local population in monitoring • Longer term involvement: most of projects take place in 2-3 year funding cycles, whereas building capacities requires a longer-term approach (e.g. 10 years) but the results ensure sustainablilty. As a recommendation, it is necessary to ensure continuity in capacity building by better coordination between NGOs (umbrella), for intance ensure to have 2-3 projects in a row to sustain the capacity building process

actors, sectors and visions, and the different messaging needed, using appropriate language to get the message across).

It is clear that convincing communication is easier when it can be buit around demonstrative projects, enabling good stories to be told about success and progress. In doing so, there is a need to tailor actions to meet end audience needs – the needs of the local population are very different to those of the indigenous populations. It is evident that a key determinant of successful communications entails engaging the community as early as possible in the process. If it is left until the project has been designed, some target groups may then refuse to get involved. Similar advice applies to the private sector – which should be seen as a key ally in implementation not merely as a target audience.

Through their discussion, the workshop experts identified six priorities for education and capacity building:

- Start by identifying the gaps in education and awareness frameworks.
- Produce comprehensive documentation about blue carbon (in Spanish) so it can be incorporated into other environmental education programmes.
- Take advantage of environmental commemoration days (International Day of Forests, or Wetlands, or Biodiversity, or the Environment, Earth Day, etc) to introduce blue carbon to a wider audience.
- Create a network of trainers for blue carbon implementation (using training for trainers methodology)
- Develop a platorm for coordination between individuals and groups of similar institutions for environmental education.
- Identify funding for developing and implementing education programmes.

5.6 PRIVATE SECTOR

Discussions on the private sector identified early on that there are several industrial sectors that may consider blue carbon as a threat, given its focus on coastal and marine landscapes. These include:

- Construction (one of the most strategic uses in Panama); and infrastructure (Colombian Caribbean coast)
- Tourism (Colombia and Panama)
- Shrimp farms (aquaculture); fisheries sector
- Extractive industries (Mining and hydrocarbons)
- Agriculture and forestry

The workshop identified several existing mechanisms and practices that could favour implication of the private sector in conservation action:

The workshop identified several mechanisms that could favour implication of the private sector in conservation action:

- Payments for Ecosystem Services (PES)
- Corporate Social/Environmental Responsibility Regulations
- Private-public synergies or private synergies: “attractive” and sustainable initiatives or win-win solutions;
- Profesional exchanges Policy influencing and lobbying for “pro-environment” decision making (“green or blue decisions”)

From a partnership perspective it was noted that ecosystem services are a good tool to help the private sector understand the economic value of such ecosystems. The key issue is ensuring that the right information on ecosystem gets to the right people who make decisions in the private sector to influence their thinking and actions.

If the private sector is to effectively engage in blue carbon projects, then clear rules will need to be developed with them regarding their associated environmental actions. If their work is directed towards reducing emissions or compensation actions are taken, it should be within a clear framework that is coherent with corporate social responsibilities programs and reporting/disclosure schemes. It is generally the case that the private sector will also commend priorities being set and shared to determine where to invest first (e.g. include blue carbon systems as priority ecosystems).

Clearly blue carbon may play a role in prompting the private sector to seek win-win situations in the form of public-private or private-private partnerships, where they improve their company performance (e.g. less energy, better image, carbon efficiency, etc.) while at the same time benefitting ecosystems. To put this into practice, there is a need to implement an education or outreach programme to support private sector company actions. This is in part to show that delivering on blue carbon is an efficient way of environmental compensation. Bringing all this about will require a coalition between scientists, NGOs and private sector to leverage government support and in order to evolve satisfactory legislation and provide clearer policy implementation frameworks.

PRIVATE SECTOR PERSPECTIVES	
What are the main economic activities that have (+/-) impact on costal ecosystems?	<ul style="list-style-type: none"> • Filling and dredging for ports (-?) • Real estate development (infrastructure, such as roads) (-) Tourism (+/-) • Fisheries (+/-); Aquaculture (+/-) • Reservoirs and Hydropower companies (-) changes in hydrological systems • Forestry, (Over-exploitation of forests) (-) • Agriculture (land use change) • Industry and agriculture (-) Pollution • Beekeeping (+) • Charcoal extraction (subsistence) (-?) • Shipping (-)
Which are the priority sectors we should concentrate our efforts on?	<ul style="list-style-type: none"> • Construction (one of the most strategic uses in Panama); infrastructure (Colombian Caribbean coast) • Tourism (Colombia and Panamá) • Shrimp farming (aquaculture); fishery sector • Mining (hydrocarbons) • Agriculture • Banking business ? & development • Commerce and Industry Chambers • Insurance companies • Forest Sector • Panama Canal Authority (ACP)? • Project developers (?)
What type of action could be made by/with these sectors?	<ul style="list-style-type: none"> • PES • Corporate Social/Environmental Responsibility; Regulations • Private-public synergies or private synergies: "attractive" and sustainable initiatives or win-win solutions; profesional exchanges • Policy influencing for decisión making ("green or blue decisions") • Research, assessments, monitoring* • Restoration/rehabilitation* • Awareness raising, commucation* • Take advantage of landscape resources • Promote the choice and supply of more environmentally-friendly products and services in the market (e.g. local market, restaruants, big retail companies) • Brands, certificates, eco-laberling, companies' recognition (e.g. by State)

18 Table 7. Private sector perspectives

5. List of recommendations for Panama and Colombia

The workshop was a first opportunity for experts drawn from both countries to meet and to share perspectives on blue carbon and to plot an agenda for future action. The outcome of the workshop is in the form this report containing 20 separate recommendations made by participants that form the core of the Action Plan. The 20 recommednations grouped under five themes are:

INCREASE VISIBILITY AND AVAILABILITY OF BLUE CARBON INFORMATION

1. Prepare documentation, in Spanish, about the potential of blue carbon for countries in the regions, within the context of all ecosystem services provided by coastal ecosystems.

2. Provide and share national-level maps, inventories and assessments (as well as other relevant informations) of current blue carbon activities in Panama and Colombia (including mangroves, seagrasses and saltmarshes), as well as other coastal conservation efforts.

a. Unify the existing information and make it available in adequate format and places like the Convention on Biological Diversity (CBD).

b. Use existing forums for outreach (such as for example the Marine Ecosystem Partnership)

3. Complement these efforts by initiating a quantitative assessment and estimation of overall blue carbon storage in both countries. The consolidation of various data sets may require the use of a standard and shared methodology to provide comparable national assessments.

IMPROVE COORDINATION WITHIN THE BLUE CARBON COMMUNITY

4. Launch an "umbrella" project in both countries that could unify existing relevant initiatives, increase synergies, and accordingly fill gaps and strengthen the definition of priorities and ensure the implementation

and follow-up of the action plan outlined in this report.

5. Create a regional sub-group of the Blue Carbon Initiative (BCI) (Central or South America) in order to better tune global initiatives and projects with the regional context and needs. This could divide responsibilities within these initiatives e.g. general science (CATIE), ecosystem services (UNEP), communities, policies, IUCN, among others.

6. Reinforce knowledge and understanding of financing mechanisms for blue carbon amongst field actors / governments and create a coordination hub to ensure timing and opportunities for new funding (e.g. GEF) is being tracked.

ENSURE STRONG POSITIONING OF BLUE CARBON AT NATIONAL LEVELS WITHIN BROADER CLIMATE CHANGE AND BIODIVERSITY DISCUSSIONS

7. Enhance communication efforts between national-level organisations working in blue carbon ecosystems (on data, field studies, etc) to share knowledge and priorities to ensure blue carbon is incorporated into wider climate change and biodiversity actions. In so doing ensure that communication formats are tailored for different audiences/stakeholders – from decision-makers and private companies, through to indigenous communities, etc.

8. Seek national-level opportunities to generate projects that combine both mitigation with ecosystem-based adaptation (EbA) and restoration objectives to allow for best use of synergies and management interventions.

UNDERTAKE ANALYSIS TO REFINE RELEVANT POLICIES AND LEGISLATION

9. Undertake national-level policy and legal analysis and studies, as well as community consultations, in order to clarify outstanding questions, including land ownership issues (i.e. carbon).

10. Develop, adopt or revise policy instruments related to coastal ecosystems in order to better encompass the blue carbon requirements, and in order to reinforce capacities to deliver integrated management of coastal areas.

11. Identify and formalise a national-level technical agency in charge of intra/inter-institution coordination for blue carbon issues for each country, or identify an existing regional or international commission that could play this role (in order to avoid multiplication/duplication of commissions)

12. Incorporate blue carbon into national REDD+ efforts and if possible in the post-2015 agreements of the United Nations Framework Convention of Climate Change (UNFCCC).

13. Identify opportunities to develop a domestic carbon market, thus avoiding dependence to external funding and enabling private companies to participate on a voluntary basis.

ADVANCE CAPACITY BUILDING WITH LOCAL INVOLVEMENT

14. Ensure that each project or initiative related to coastal ecosystems includes as relevant a component related to blue carbon awareness and capacity building. This could be achieved by accommodating such needs within existing (or new) platforms for interinstitutional/intersectorial coordination in the field of environmental education and thereby ensuring that the blue carbon message is appropriately conveyed.

15. Ensure that blue carbon projects involve local/indigenous communities as well as local businesses from the early design stage on, as well as in the monitoring efforts (e.g. including proper training).

16. Identify a “champion” or several champions within local communities for blue carbon by linking to a personal story involving blue carbon that they and others can readily connect to. The intent is to trigger better involvement of local communities. Similar engagement with the private sector should also be envisioned.

ACTIVATE PRIVATE SECTOR ENGAGEMENT

17. Bring the private sector into a multi-sectorial dialogue with NGOs and scientists in order to jointly influence the public sector and policy setting bodies, and combine forces to foster the integration of blue carbon into regional strategies. This could take place through already existing committees, e.g. Panama interdisciplinary Wetlands Committee. Discussion should be started with key industrial sectors (see table 7).

18. Encourage authorities to generate guidelines and maps targeted at the private sector for defining priority coastal ecosystems where the private sector should invest for conservation or restoration.

19. Encourage development of a framework for “green products” e.g. labels, green stamp, state recognition and valorisation of exemplary companies, which could valorise conservation of marine ecosystems/blue carbon.

20. Seek win-win situations for public-private or private-private partnerships, where company performance (e.g. less energy, better image, carbon efficiency, etc.) can be improved while also benefiting ecosystems. Identify a “champion” (enterprise or individual) and communicate through telling positive stories.

6. Conclusions and next steps

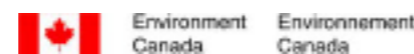
This workshop was a first and successful step towards developing a blue carbon strategy for Panama and Colombia. It was the first event to bring together blue carbon experts from the region with other local, regional and international stakeholders.

The workshop showed that many initiatives are already underway in both countries, but that there is only minimal or informal coordination. The workshop was a first step in developing a shared national-scale strategy for the conservation of blue carbon habitats and for building synergies between existing projects.

This report makes the assessment of how prepared Panama and Colombia are to implement blue carbon projects, and the action plan represents significant progress in identifying the ‘missing steps’ that would otherwise be barriers to future implementation.

To build on this, and keep the momentum for action, we should ensure that responsibilities are clearly defined for the implementation of the recommendations. This is not the case yet and there is a risk of not moving forward. We would thus recommend that the first priority step is to define and organise a working group for each country that is in charge of continuing this work. IUCN will organise discussions with the BCI in this respect and investigate funds for supporting this task.

APPENDIX 1: List of participants



Taller de Carbono Azul Panamá/Colombia
25 de marzo de 2014
Ciudad de Panamá, Panamá

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APPENDIX 2: Workshop agenda

Day One: 26 March, 2014

SESSION / SCHEDULE	NAME, DESCRIPTION AND EXPECTED OUTPUTS	PARTICIPANTS
8h00	Arrival and Welcome Coffee	
8h30 – 8h45 8h45 – 9h	OFFICIAL OPENING INTRODUCTION TO THE WORKSHOP + ROUNDTABLE FOR PRESENTATION OF PARTICIPANTS •What is preparedness for Blue Carbon? •What we want to achieve during this workshop?	Daysi Vargas (ANAM, Panama) IUCN (Julien Boucher, Karen Podvin, Téa García-Huidobro)
9h -10h00	INTRODUCTION TO BLUE CARBON •Importance of blue carbon ecosystems (how much is it? Where is it? Main issues) •Blue carbon global policy frameworks and practical actions (What are the current studies, initiatives worldwide?) •Taking a broader look at the values Blue Carbon ecosystems can bring : an overview of key ecosystem services provided by marine and coastal ecosystems, in particular mangroves, salt marshes, sea-grass beds and their importance for livelihoods (Ecosystem Based Adaptation –EbA-) •‘Eye-catching numbers’ regarding the economic significance of marine and coastal ecosystems – Blue Capital – Green Economy List of supporting documentation: (The Commonwealth “The Management of Coastal Carbon Sinks in Vanuatu” 2013, AGEDI “Building Blue Carbon Projects” 2014)	Heliodoro Sánchez Páez (Colombia)
10h00 - 10h30	COFFEE BREAK	

SESSION / SCHEDULE	NAME, DESCRIPTION AND EXPECTED OUTPUTS	PARTICIPANTS
10h30 - 11h15	OVERVIEW OF CURRENT BLUE CARBON PROJECTS/INITIATIVES IN SOUTH- AND CENTRAL- AMERICA (FOCUS ON PANAMA AND COLOMBIA) Topics: •What has already been done? •What are the gaps? •What are the main issue foreseen? Expected outputs: •Complete list of BC projects for Colombia and Panama •List of proposed BC activities •Identification of gaps from initiatives	Julio Rodríguez (TNC, Panama)
11h15 – 12h	LEGISLATION AND POLICY OVERVIEW FOR THE TWO REGIONS Barriers and opportunities to BC projects Introduction to WG1□WG3	Francisco Arias-Isaza, (INVEMAR, Colombia)
12h - 13h30	LUNCH BREAK	
13h30-15h00	WG 1: INCLUDING BLUE CARBON INTO EXISTING COASTAL MANAGEMENT ACTIVITIES Topics: •Coastal management governance framework •Carbon responsibilities and ownership by communities and government •Biodiversity / MPAs Expected outputs: •List of current activities / initiatives •Gaps in activities •Opportunities / barriers for creating linkages •Priorities for action	José Polanco (ANCON, Panama)

SESSION / SCHEDULE	NAME, DESCRIPTION AND EXPECTED OUTPUTS	PARTICIPANTS
15h – 16h30	<p>WG2 : INCLUDING BLUE CARBON INTO EXISTING FORESTRY ACTIVITIES</p> <p>Topics:</p> <ul style="list-style-type: none"> •REDD+ in Colombia and Panama •Other forest initiatives <p>Expected outputs:</p> <ul style="list-style-type: none"> •List of current activities / initiatives •Gaps in activities •Opportunities / barriers for creating linkages <p>Priorities for action</p>	Miguel Cifuentes (CATIE)
16h30 – 17h	COFFEE BREAK	
17h – 18h30	<p>WG3: CARBON STRATEGY AT COUNTRY LEVEL</p> <p>Topics :</p> <ul style="list-style-type: none"> •National appropriate mitigation actions (NAMAs) •National adaptation program of actions (NAPAs) <p>Expected outputs :</p> <ul style="list-style-type: none"> •List of current activities / initiatives •Gaps in activities •Opportunities / barriers for creating linkages •Priorities for action 	<p>Eduardo Reyes (Coalition for Rain Forest Nations, Panama)</p> <p>Diana Lugo (Ministry Environment CC Direction, Colombia)</p>

Day Two: 27 March, 2014

SESSION / SCHEDULE	NAME, DESCRIPTION AND EXPECTED OUTPUTS	PARTICIPANTS
8h00	Arrival and Welcome Coffee	
8h30 -10h	<p>WG4 : LOCAL COMMUNITIES ENGAGEMENT</p> <p>Topics :</p> <ul style="list-style-type: none"> •Who are local communities? What challenges are they facing? •Overview of what Blue Carbon habitats can bring to local communities e.g. firewood or fishing areas •How to reach/enpower these communities? <p>Expected outputs :</p> <ul style="list-style-type: none"> •What are current practices / uses •What are opportunities? Where are we doing something? •What prevents a better engagement of communities? •Opportunities / barriers for creating linkages •Priorities for action 	Opal Bent Zapata (CORALINA, Colombia)
10h - 10h30	COFFEE BREAK	
10h30 - 12h	<p>CARBON HABITAT</p> <p>Topics:</p> <ul style="list-style-type: none"> •Overview of what Blue Carbon habitats can bring to local economies •How to better integrate economic activities within the blue carbon habitats and valorise ecosystem services / natural capital? •We are missing an opportunity to safeguard prosperity and growth. What does failure look like? What are the economic and development implications of following the path we are on at present? What will losing marine/coastal ecosystems entail? •Overview of strategic investments in marine and coastal ecosystems reduce liability exposure for flood damage and sea-level rise (e.g. for property owners, construction and insurance industries), to generate carbon offsets / biodiversity offsets / or ecosystem services payments, to ensure sustainability and growth of tourism revenue, to reduce supply-chain risks, etc.. <p>Expected outputs:</p> <ul style="list-style-type: none"> •What is the current knowledge / understanding ? •What is missing? •Opportunities / barriers •Priorities for action 	

SESSION / SCHEDULE	NAME, DESCRIPTION AND EXPECTED OUTPUTS	PARTICIPANTS
12h - 13h30	LUNCH BREAK	
13h30 – 15h	<p>WG6 : EDUCATION AND AWARENESS RAISING</p> <p>Topics :</p> <ul style="list-style-type: none"> •Outreach, education and conversations with local communities to build understanding •Responsibilities and practical programmes of activities to best manage and protect the blue carbon resources; <p>Expected outputs :</p> <ul style="list-style-type: none"> •Where we are? •What is missing? •Opportunities / barriers •Priorities for action 	Julio Montes de Oca (Wetlands International, Panama)
15h-16h30	<p>WG7 : EXPLORE FUNDING OPPORTUNITIES AND COMPLEMENTARITIES TO EXISTING DONOR INITIATIVES</p> <p>Topics :</p> <ul style="list-style-type: none"> •BC project funding sources and mechanisms <p>Expected outputs :</p> <ul style="list-style-type: none"> •Where we are? •What is missing? •Opportunities / barriers • .. Action plan 	Fabián Navarrete (ECOVERSA, Colombia)
16h30 – 17h	COFFEE BREAK	
17h – 17h30	<p>WRAP-UP OF THE MEETING AND PRELIMINARY SET OF RECOMMENDATIONS FOR PANAMA AND COLOMBIA BLUE CARBON PREPAREDNESS</p> <p>Topics:</p> <ul style="list-style-type: none"> •List of all current and planned activities •List of key barriers •List of key opportunities •Brainstorming on key recommendations to make <p>Expected outputs:</p> <ul style="list-style-type: none"> •Opportunities for fast-track implementation: 10 recommendations for each countries 	IUCN (Julien Boucher, Karen Podvin, Téa García-Huidobro)



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