



High-Quality Blue Carbon Principles and Guidance

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INTENT

The carbon market is proving to be a powerful tool for incentivizing climate mitigation through the conservation and restoration of nature. Nature-based carbon credits are the emission unit representing the reduction or removal of greenhouse gases through natural systems. Blue carbon, the carbon captured and sequestered by coastal wetlands including mangroves, seagrasses, and tidal marshes, is experiencing rapid increase in interest as a nature-based solutions due to its capacity to capture and store carbon at higher rates than terrestrial systems. However, this demand and the associated financing available may also lead to projects being developed that are not of sufficient quality. While there are many guidance documents outlining quality criteria for the voluntary carbon market, this guidance attempts to identify principles and guidelines specifically tailored to address the unique aspects of blue carbon. It also is intended to lay the groundwork for understanding key markers that can be used to evaluate the quality of projects.

The High-Quality Blue Carbon Principles and Guidance is being developed for credit purchasers, investors, suppliers, and project developers to provide a consistent and accepted approach to ensuring that blue carbon credits optimize outcomes for people, biodiversity, and the climate. It is intended to consolidate existing knowledge and best practices and provide guardrails for investors on what criteria should be met to achieve a high-quality blue carbon credit.

Vision

This work is driven by a vision of blue carbon credits addressing global challenges in locally beneficial ways. Mangroves, seagrasses, and tidal marshes have long been recognized as providing coastal resilience, local livelihoods, food security, and preserving biodiversity. They are increasingly becoming recognized by scientists, policymakers, civil society, and credit purchasers for their role in sequestering and storing carbon.

Despite increasing demand for blue carbon market credits and their potential to tackle the triple challenges of climate change, biodiversity preservation, and the rights and livelihoods of communities, blue carbon opportunities are currently underrepresented in carbon markets. Blue carbon is currently a small slice of the carbon market “pie”, but the potential for blue carbon finance within the broader forestry and land-use change segment of the voluntary carbon market is significant. The full blue carbon wealth generated by blue carbon sequestration has been valued at >USD\$190 billion per year.¹ A recent market survey showed that 51% of asset managers saw opportunities for investment in blue carbon.² Among the factors contributing to the lower level of activity in blue carbon is the need for projects to raise development capital several years in advance of being able to be certified to issue credits, and the need for increased confidence in the carbon benefits and permanence related to long-term storage and sequestration.

As interest in blue carbon projects increase, it is critically important that there be commonly accepted guidelines around what constitutes “high quality”. A holistic vision for blue carbon that includes commitments to improving nature and equity will help ensure the durability and positive impacts of these mitigation strategies.

¹ Christine Bertram et al., “The Blue Carbon Wealth of Nations,” Nature News (Nature Publishing Group, July 12, 2021), <https://www.nature.com/articles/s41558-021-01089-4>.

² “Investors and the Blue Economy,” Credit Suisse, 2020, <https://www.credit-suisse.com/media/assets/microsite-ux/docs/2021/decarbonizingyourportfolio/investors-and-the-blue-economy-en.pdf>.

Methodology

The methodology for developing this draft guidance is as follows:

- Desk analysis of reports, case studies, and standards for both carbon credits and marine conservation
- Interviews with stakeholders, including businesses, project developers, scientists, civil societies, and credit issuers
- Synthesis of this information into an overview of the current consensus regarding the quality and integrity principles in carbon markets and marine conservation
- Identification of the unique considerations and opportunities for issuing high-quality credits for blue carbon
- Identification of the gaps that need to be filled for blue carbon markets to be viable, scalable, and enduring

Following this desktop research and initial consultation phase, the next stage of development for this document is to invite your feedback and reactions.

Specifically, your:

- Feedback on and reactions to the concepts, principles, and guidelines throughout.
- Suggestions for principles and guidelines that have not yet been identified and articulated.
- Examples of best practices, benchmarks, and objective metrics developed and applied to implement these principles.
- Suggestions for additional references not included in Appendix A.

KEY MESSAGES FOR BUYERS AND INVESTORS

For buyers seeking positive impacts across environmental, social, and climate outcomes, blue carbon has striking appeal due to the potential for synergistic returns on investment. The realization of this potential to deliver impacts at scale depends on the ability and readiness of all parties – including buyers and investors – to tackle the “start-up” challenges facing the development of projects together.

Best practices and opportunities for buyers and investors in the blue carbon market:

- **Set science-based net zero targets and meet commitments to reduce scope 1, 2, and 3 emissions**, limiting purchase of credits to beyond value chain mitigation to complement emissions reductions (See VCM Claims Code of Practice).
- **Provide seed funding for emerging projects and scientific innovation.** The process to design and verify a blue carbon project takes time (3-5 years), resources, and therefore requires patient capital. Developing an income stream from many projects is a long process and early-stage impact investment is needed to finance the scoping and start-up costs of implementing intervention activities (restoring/managing/conserving), community engagement, technical training, capacity building, and to meet criteria set by credit verifiers.
- **Contribute to filling critical science gaps.** There is a high cost to conduct needed science-based assessments, particularly for determining sequestration potential. Innovative

measurement techniques, better access to telemetry data, and increased local capacity to collect ground-truthing data are all critical areas in need of early investment. Uncertainty about the fate of stored carbon when blue carbon ecosystems are inundated by sea level rise must also be addressed to appraise the long-term permanence of these systems under advancing climate change.

- **Encourage and promote enabling policies for the development of blue carbon projects.** Buyers should consider the policy barriers that inhibit high-quality carbon project success and prioritize advocacy in geographies with the largest stocks/potential for blue carbon. Enabling conditions for high-quality carbon credits to be generated and traded include benefit-sharing, co-management, tenure or management rights, and national arrangements for participating in carbon markets. In some cases, new laws and regulations may need to be put in place to ensure appropriate incorporation of blue carbon projects in jurisdictional regimes and Nationally Determined Contributions (NDCs).
- **Partner with project developers who invest in community engagement and development as a fundamental criterion.** Buyers should insist on seeing evidence of ongoing long-term engagement, inclusive governance, or other meaningful representation of local inhabitants in project management and understand how they can support ongoing community engagement, capacity development, and resource management. Buyers should understand the potential decision-making roles of a range of natural resource ministries because many blue carbon projects involve management of public resources, such as coastal and marine protected areas and therefore multiple ministries.
- **Purchase credits or design contracts that equitably share benefits with the community.** Rights holders and relevant stakeholders, including indigenous peoples, local communities, women, and other minority groups need to be involved in decisions regarding fair, equitable, and transparent allocation of revenue that is legally robust and produces tangible outcomes for residents. Buyers must recognize that job creation associated with project implementation is part of the cost of implementing a project and is not a valid substitute for improving overall community income. Failure to support the wider community increases the risk of need-driven damage to project sites.
- **Prioritize fair priced over lowest priced credits.** Fair credit prices should reflect project costs, including labor, scientific monitoring, active and continuous community engagement, and sufficient revenue to support community benefit sharing. Credits priced fairly are likely to offer the best assurance of project permanence as well as outcomes for people, nature, and the climate.
- **Recognize the long-term nature of blue carbon investments.** The high-quality and multi-faceted social, environmental, and climate outcomes from blue carbon credits require commitment and patience to realize a return on investment.

REVIEWER: Please offer any edits or additions you would recommend on the above section and share your rationale.

KEY MESSAGES FOR SUPPLIERS AND PROJECT DEVELOPERS

For suppliers and developers, designing and implementing conservation and restoration projects for blue carbon climate solutions should involve an approach that is scientifically rigorous, inclusive, transparent, participatory, and that delivers benefits for people, biodiversity, and the climate.

Therefore, project developers must incorporate best practices for science, community engagement and development, and environmental conservation.

While many of the key messages for buyers and investors also apply to suppliers and project developers, it is important to recognize the following aspects that merit particular attention:

- **Ensure inclusive participation in design and project governance.** Projects should be designed as holistic interventions that address the economic well-being and livelihoods of impacted communities in addition to the ecosystem and climate benefits. This includes ensuring fair and equitable benefit sharing, transparent communication, and sustained engagement with rightsholders and direct and indirect stakeholders throughout the duration of the project.
- Broad stakeholder engagement includes indigenous peoples, and representation inclusive of age, gender, and other demographic markers, with clear and accessible processes to identify and engage all stakeholders in making decisions and any actions. Meaningful engagement includes feedback and grievance mechanisms available to all rightsholders and stakeholders.³ Natural resource management agencies must also be involved, especially if they have management authority over resources (including water, forest, and fisheries authorities). Buy-in from government partners may be critical for a project to move forward, given that much of coastal landscape falls under government ownership and management, and country governments are increasingly claiming carbon rights. Often, many agencies within a government are managing different parts of the system and may have misaligned or even conflicting mandates that need to be addressed. This buy-in may also generate additional resources to support the establishment of good governance processes and offer continued engagement to support the project's success.
- **Utilize the best available scientific knowledge, including indigenous, traditional, and local knowledge,** and account for unique ecosystem dynamics. Projects should establish a conservative carbon baseline through evidence-based assessments of the ecosystem and the amount of carbon it may capture. Projects should contribute to the knowledge development and data on blue carbon activities and their results over time.⁴
- **Understand and manage impacts and drivers of change to the ecosystem.** Ecological impacts or anthropogenic stressors outside of the project ecosystem that prevent successful restoration unless addressed can hinder the success of the project. Remedies to address these impacts may need to be implemented outside the immediate location of the project. Project developers must understand the ridge-to-reef/landscape scale implications of the surrounding geography and potential landward activities that impact coasts and oceans, such as dams and agriculture pollution. Trade-offs and opportunity costs, such as forgoing coastal development, for local communities must be understood, addressed, and agreed upon. For example, where subsistence fishing and other activities continue to be essential, but may be restricted, communities may be asked to agree to apply sustainable harvesting practices.
- **Provide opportunities to build capacity for local project participants to participate and lead in the development, management, and monitoring of blue carbon projects.** Projects should enhance the literacy of local communities and indigenous groups to engage in carbon markets and coastal and marine conservation. This includes financial literacy training, building capacity to conduct scientific measurement and reporting, ecological

³ Fairtrade Climate Standard, The Nature Conservancy's Human Rights Guidance

⁴ Refer to methodologies of Plan Vivo and Verra

restoration activities, and sustainable resource management practices. Projects should provide opportunities to build local capacity to implement monitoring activities in the long term, such as partnering with local universities and ensuring that local community leaders have access to data.

- **Uphold human rights in project design and implementation protections**, including implementing Free Prior and Informed Consent, recognizing tenure rights, upholding indigenous peoples’ rights and cultural practices, and respecting labor rights. Projects should ensure that workers have freedom from discrimination, forced or compulsory labor, freedom of association and collective bargaining, and have health and safety and prohibition on child labor.
- **Understand the financial resources needed, and for what duration, to establish blue carbon projects that are potentially carbon marketable.** Suppliers and investors need to negotiate outcomes that generate adequate returns without compelling suppliers to adhere to lock-in low rates for future credits. Blue carbon struggles with up-front and long-term project costs, and this type of financial exploitation impacts long-term financial revenues which undermines enduring blue carbon projects. For blue carbon to meet market demand, approaches to portfolios need to include impact investments to support technical assistance and capacity building to support project development and ongoing projects. Creative approaches to blended finance between governments, bilateral and multilateral donors, philanthropies, and the private sector are also important strategies for meeting market demand.
- **Equitable benefit sharing with local communities.** Projects should have a benefit sharing agreement in place to ensure that profits and benefits are distributed equitably and transparently. Decisions about how profits are allocated should be made through a collective decision-making process with project stakeholders and rightsholders. Project developers should be transparent about how they will provide benefits to under-resourced and marginalized populations, publicly disclose the percentage⁵ of project revenues and profits going to local communities and other partners, and define what form those payments will take (e.g., community services or direct cash payments).
- **Adaptively manage projects to mitigate risks** to the durability of carbon stored in blue carbon ecosystems. Coastal ecosystems are continuously changing living systems, which require management that can accommodate uncertainty. Projects should use and respond to monitoring and evaluation protocols.
- **Minimize and mitigate unanticipated environmental risk and enhance ecological integrity of the project site.** Projects should avoid ecological disturbance or other environmental damage including but not limited to loss of biodiversity, habitat loss, habitat conversion, reduced water quality, increased erosion, or net emissions. Projects should manage ecosystems for improved biodiversity, resilience, and adaptation.

REVIEWER: Please offer any edits or additions you would recommend on the above section and share your rationale.

⁵ Standard bodies establish best practice for benefit sharing, for example, Plan Vivo requires a minimum of 60% of profits are directly shared with communities. The Nature Conservancy guidance recommends at least 70% of the gross carbon revenue for project activity implementation and MRV. Once these needs have been met, the additional carbon revenue (up to 70% of the remaining gross carbon revenue) may be used to fund other climate-related conservation work.

CARBON MARKET PRINCIPLES AND CONSIDERATIONS FOR BLUE CARBON

The **principles for high-quality carbon projects and credits** are decently agreed to and accepted by environmental organizations, academia, multinational institutions, and businesses. An overall summary includes^{6,7,8}:

- Enhancing positive and preventing negative environmental and social impacts
- Transparent and accurate GHG accounting
- Facilitating a transition toward net zero emissions
- Robust third-party auditing
- Ensuring additionality⁹
- Ensuring permanence¹⁰
- Transparent accountability to local populations and based in community engagement
- Establishing good governance
- Practicing Free Prior and Informed Consent¹¹
- Avoid double counting¹²

Blue carbon credits and projects must adhere to the same criteria and meet the same minimum requirements of high quality as terrestrial projects. However, achieving the same benchmarks of high quality in dynamic aquatic ecosystems can present unique challenges due to the fluidity of blue carbon systems and other complicating factors. The following key considerations highlight some of the unique factors that need to be considered with respect to blue carbon. Where available, best practices for satisfying the principles and guidelines are referenced.

Key Considerations for High-Quality Blue Carbon

REVIEWER questions for your input: These two questions apply to this whole section. Specific questions for certain topics are included throughout the section.

- **Reviewer question: What additional best practices or guidance have you seen that have been developed and applied to address these considerations?**
- **Reviewer question: What evidence would you need to consider to understand whether this guidance or best practice has been met? Please share any benchmarks or objective metrics that could serve as evidence of these guidance or best practices being met.**

⁶ Schneider, et al. "What Makes a High-Quality Carbon Credit?", 2020.

⁷ "Criteria for High-Quality Carbon Dioxide Removal." Carbon Direct. 2022.

⁸ "IUCN Global Standard for Nature-Based Solutions." ICUN, 2020.

⁹ Additionality: Emission reductions or removals are additional if the mitigation activity would not have taken place in the absence of the added incentive created by the carbon credits. Credits are purchased for projects that would not occur under other means, such as laws, regulations, or government policies. Auditors must assess the influence of other financial, legal, economic, or technological drivers of the mitigation activity.

¹⁰ Permanence: carbon reductions are not released back into the atmosphere for a reasonable length of time.

¹¹ Free Prior and Informed Consent: a specific right of indigenous peoples that allows them to give or withdraw consent to a project.

¹² Under Article 6, internationally transferred emissions reductions and removals must be authorized by the host country to be used toward another country's NDC. The host country must make a 'corresponding adjustment' for authorized credits to ensure that it no longer counts the emissions reduction in its NDC. This avoids double counting of reductions and removals.

- **Governance considerations:** The global distribution of blue carbon ecosystems includes coastal areas in 151 countries, from the tropics to the Arctic. Across different governments, there are varying levels of protection for coastal ecosystems, and policies that inform benefit sharing and co-management across jurisdictions. Consideration of variations across geographies, including land ownership, legislation protecting target ecosystems, and incentives systems need to inform projects on a site-by-site basis.
- Blue carbon ecosystems occupy intertidal and subtidal zones, which are primarily government-owned lands and may even extend beyond a country's exclusive economic zone and have transboundary implications for management and marketing blue carbon credits. Local jurisdictions can add complexity to a blue carbon project where various government agencies have overlapping jurisdiction in a project site. In the case of mangroves, their range can extend landward and may straddle publicly owned and privately owned lands complicating the tenure issue. In some countries, it is also unclear who owns the blue carbon and therefore who has the right to transact the carbon credits. These challenges must be addressed on a site-by-site basis to clarify the policy implications around tenure and resource rights.¹³
- **Based in community engagement and establishing good governance:** as with all carbon credits, the participation of local communities is critical to designing and implementing successful and durable interventions. The role that communities and indigenous peoples play in the preservation of coastal ecosystems may be more dynamic and complex than those in terrestrial environments due to tidal fluctuations, seasonal fishing regimes, and the fact that governments often have ownership. Project developers and buyers need to be accountable to local populations, including indigenous peoples, that may be impacted by the project.
- In some cases, a holistic development approach is needed to create the capacity for communities to prioritize conservation while still meeting other basic needs. Equity and inclusion are not just about including marginalized and minority groups; they are also about ensuring that these groups have the means to participate and lead.
- **Permanence:** Permanence risks, including social and environmental drivers of permanence, need to be assessed and mitigated. These risks can be political, project management-related, financials, market dynamic, as well as risks from both human actions and impacts beyond human control (e.g., natural disturbances).¹⁴ Sufficient livelihood improvements (including income, healthcare, and education) that will be critical to ensure longer term duration of projects need to be considered in project design, and it is paramount that partnerships are developed to help support robust community development and to mitigate social drivers of permanence. Blue carbon ecosystems are unique in that, more than other systems, they are connected to and can be impacted by adjacent or even systems farther away (i.e., upriver dams, agriculture runoff, increased sedimentation from logging and mining, sea level, damage to coral, etc.). This connectivity is important to understand when considering mitigation activities and permanence. Ecosystems should be managed for ecological health and resilience to better recover following disturbances and progressing climate change scenarios. Key factors include establishment of liability for reversals, the duration for which the occurrence of reversals is monitored and accounted, whether and how any reversals are compensated, and whether the compensation mechanisms are robust enough to also address disastrous events.

¹³ Macreadie, et al. 2022

¹⁴ CI Whitepaper

- **Additionality:** Determining additionality has some unique challenges in the context of blue carbon. Factors include overlap of blue carbon ecosystems and declared protected areas, national conservation priorities, and sustainable coastal wetland management where protections are not being effectively implemented. International environmental policies, such as the United Nations Sustainable Development Goal 14, the United Nations Framework Convention on Climate Change (UNFCCC), and Convention on Biodiversity Aichi Target 11, incentivize coastal conservation for social, environmental, and climate benefits. However, declarations of protected geographies are not the same as active management and conservation of those areas. Therefore, it is important to assess whether a policy is being effectively enforced when determining regulatory additionality. In blue carbon ecosystems, a marine protected area may be established for sustainable fisheries management rather than ecosystem management, and therefore are not part of an active management plan for other natural capital such as blue carbon.

REVIEWER question: How might projects still be considered additional if they are located within protected areas but are still in need of active management/conservation/interventions and would benefit from such a project?

REVIEWER question: Can additionality requirements hinder environmental improvement more than it helps? What should be done about this and by whom?

- **Investment:** Access to funding at the right time in the development of blue carbon projects is a challenge for project developers to be able to meet and maintain the criteria to generate high-quality credits. One uncertainty is whether the financial return from the sale of credits will be able to cover the cost of the project long term. This is not a reflection of the overall return on investment (ROI), as a high-quality blue carbon credit helps advance achievement of a number of sustainable development and conservation goals. It is, however, related to the high cost of producing blue carbon credits. Direct investment in project development and indirect investment to support enabling conditions and improved livelihoods will help scale blue carbon in international carbon markets.
- **Transparent and accurate GHG accounting:** Scientific uncertainties regarding the carbon profile of blue carbon projects over time must be clarified and reduced. Demonstration projects could provide opportunities to study and build evidence that is needed to understand and reduce risks and uncertainties associated with blue carbon projects and crediting. It will be important to develop and verify effective and cost-efficient Measurement, Reporting, and Verification (MRV) approaches, and account for the continued costs of monitoring that are critical for the project and building an evidence base.
- **Policy enabling conditions:** Attention needs to be given to how blue carbon credits can best be addressed in carbon accounting for political jurisdictions, NDC targets, national REDD+ programs (Reducing Emissions from Deforestation and forest Degradation), and UNFCCC Article 6 requirements, if applicable. While Article 6 guidance does not directly govern the voluntary market, it empowers the host country to decide how to treat voluntary carbon market transactions. Therefore, carbon credit buyers must check the national rules for carbon market transactions, even when used for voluntary purposes.
- The policy, legal, and governance environment of the jurisdictions in which the project operates need to be clearly mapped, including understanding the risks posed by the changing of administrations. Legal rights to land, resources, and carbon must be

understood, as must the legal mechanisms that govern how finances will flow to the project and what they can or cannot be used for. In many projects, the main barrier to selling credits is policy, which may not keep pace with global market demand for credits. Local environmental offices and natural resource agencies including water, forest, and fisheries must be involved as part of the broad stakeholder engagement activities for any project and can play a key role in technical training and capacity building of local people to manage projects.

- **Enhance positive environmental impacts:** Projects directly support climate change resilience and as a best practice an additional premium may be paid to support climate change adaptation and resilience outside the scope of the blue carbon project. (Refer to Fairtrade Climate Standard on use of Fairtrade Premium.)¹⁵
- **Robust determination of carbon sequestration and storage:** At the time of this writing, there are a few standards and methodologies that are both generally applied to blue carbon projects and widely accepted as high quality and appropriate in this application.¹⁶ Many standards are in development, and new and updated standards are needed as well in order to improve and tailor carbon accounting to blue carbon ecosystems and to ease the burden on project developers. For this reason, this preliminary guidance should be considered dynamic and framing in its scope and is should not be read as setting standards. Both project developers and investors are urged to monitor the changing landscape of standards and select the highest quality standards available.

REVIEWER question: What additional best practices, benchmarks, and objective metrics have you developed and applied to address robust determination of carbon sequestration and storage? What additional best practices, benchmarks, or metrics on this topic are needed? Who should be responsible for investing in MRV advancements?

REVIEWER question: What other methodologies and standards have been used for blue carbon projects? Which ones have we missed?

REVIEWER: Please offer any edits or additions you would recommend to the above section and share why.

¹⁵ [Fairtrade Climate Standard](#)

¹⁶ Preliminary research indicates that methodologies specific to blue carbon include Verra methodologies VM0007 and VM0033 [There may be more. Please see reviewer question above]. Additionally, Gold Standard, American Carbon Registry, and Climate Action Reserve bring with them an additional level of confidence bestowed by ICROA having selected them as preferred standards.

NEXT STEPS FOR IMPLEMENTATION

Through further stakeholder consultation on this draft and other outreach, there will be an articulation of recommended next steps for implementation of these blue carbon principles and guidance. Implementation could be as simple as “including these principles and guidance to inform criteria for a project RFP” or “leveraging these principles and guidance to inform a project plan”. Alternatively, implementation could be as complex as “creating an independent organization to validate adherence to these principles and guidance”. This portion is not written yet. Your input, ideas, and vision are welcome throughout the process to shape and inform these recommendations for implementation.

Questions for your input:

- What would effective implementation mean to you with respect to these principles and guidance?
- How do you see putting these principles and guidance into practice in your work?
- How do you hope these principles and guidance might impact the activities of others in the market?

GLOSSARY (STILL UNDER DEVELOPMENT)

Additionality: ensures that the carbon credit project occurs outside of *enforced* mandated protections such as national laws, regulations, or other government policies. A project is additional if it would not have taken place without the added incentive created by the carbon credit.

Double counting: The counting of greenhouse gas emission reductions or removals more than once towards mitigation targets or goals.

High-quality blue carbon credit: A high-quality blue carbon credit must demonstrate that it is derived from a high-quality project and has measurable emissions reductions and removals of greenhouse gasses that meet the standard criteria for carbon crediting (e.g., additionality, permanence). It is also important to recognize that in addition to meaningful climate outcomes, high-quality blue carbon projects also deliver biodiversity and social and economic benefits that often have a more immediate relevance to local communities.

High-quality blue carbon project: High-quality blue carbon projects provide measurable emissions reductions or removals of greenhouse gasses. They are based on an understanding of the system in which they operate, and on a foundation of community engagement, including drivers of agents and barriers to restoration that informs design field actions. From there, they engage with the most rigorous scientific understanding and evaluation and are beneficial to both the environment and people and are aligned with national policy priorities. Over the project lifetime, the blue carbon projects are adaptively managed, measurable, and lasting. Consideration of variables across geographies, including land ownership, legislation protecting target ecosystems, and incentives will need to inform projects on a site-by-site basis. Recognizing the full and effective participation in both design and governance of blue carbon crediting programs and equitable benefit sharing with local and indigenous communities should be a priority of any blue carbon project. Permanence risks, including social and environmental drivers of permanence, are assessed and mitigated. Additionality is clarified in the context of overlap of blue carbon ecosystems and declared protected areas, national conservation priorities, and sustainable coastal wetland management where protections are not implemented. Legal rights to land, resources, and carbon must be understood, as must the legal mechanisms that govern how finances will flow to the project. The highest quality standards are used to determine carbon sequestration and storage.

Leakage: The net change of greenhouse gas emissions or removals that are attributable to the mitigation activity but occur outside the boundary of that activity. These include, for example, indirect emission changes upstream or downstream of the mitigation activity or rebound effects.

Non-Permanence: a situation where the emission reductions or removals generated by the mitigation activity are later reversed, for example, due to a natural disaster or project mismanagement. The mitigation activity thus may only result in a temporary greenhouse gas benefit for the atmosphere.

Nature-based solutions: actions to protect, conserve, restore, sustainably use, and manage natural or modified terrestrial, freshwater, and coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, and resilience and biodiversity benefits.¹⁷

¹⁷ “United Nations Environment Assembly Agrees Nature-Based Solutions Definition,” Nature, accessed June 16, 2022, <https://www.naturebasedsolutionsinitiative.org/news/united-nations-environment-assembly-nature-based-solutions-definition/#:~:text=The%20Fifth%20Session%20of%20the,social%2C%20economic%20and%20environmental%20effects.>

Grievance mechanisms: Grievance mechanism should be a source for continuous learning and drawing lessons from harms to adequately address them and avoid in the future. A grievance procedure includes a responsible person in charge of grievances nominated by the producer organization, processes for documentation of grievances and corrective measures, processes for decision-making within a specific timeline, and transparent procedures. (From Fair-Trade)

APPENDIX A

Works Consulted

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APPENDIX B

Research Methodology

Preparation of this assessment of principles involved a review of current principles, definitions, and standards, and has been informed by stakeholder consultations conducted through ten stakeholder interviews, representing business, civil societies, carbon project developers, carbon credit verifiers, and purchasers across four countries. Each of the relevant works consulted were reviewed with respect to two sources: the “What Makes a High-Quality Carbon Credit” report by World Wildlife Foundation, Environmental Defense Fund, and the Oke-Institute, and “An appeal for a code of conduct for marine conservation” (Bennett et al. 2017) to conduct a gap analysis. Additional standards and principles were mapped against the criteria presented in these two reports to determine main consensus points, draw out important themes, and reveal gaps that need to be addressed. This exercise provided a framework to identify areas of alignment across various actors in the carbon market and revealed opportunities to incorporate knowledge about marine conservation principles to present a holistic vision for blue carbon.