

Executive summary:

High-Quality Blue Carbon Practitioners Guide & Progress Wheel

Version 1.0 2024



High-Quality Blue Carbon

Practitioners Guide & Progress Wheel

Executive Summary



Funded by the UK Government and supported by the Ocean Risk and Resilience Action Alliance (ORRAA)



Development of the High-Quality Blue Carbon Practitioner's Guide and Progress Wheel has been supported by ORRAA and led by Conservation International, in partnership with The Nature Conservancy, The World Economic Forum, Friends of Ocean Action, Salesforce and the International Blue Carbon Institute, and featuring contributions from a range of experts from across corporate partners, project developers, and the Global Mangrove Alliance.

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The Potential of Blue Carbon

Coastal vegetated ecosystems, such as mangroves, saltmarshes, and seagrass, are increasingly recognized as a critical conservation and restoration priority due to the multiple climate mitigation, adaptation, biodiversity and coastal resilience services they provide. Their unique capacity to efficiently capture and store carbon over long periods has led to their classification as “blue carbon” ecosystems. These ecosystems can be dynamic and sometimes extreme places to work, and they are rarely removed from human influence. In many parts of the world, the wellbeing of blue carbon ecosystems, human communities and the blue economy are intrinsically linked, with leading academics referring to them as “socioecological” systems.

The private sector and philanthropy have shown enthusiastic interest in supporting blue carbon ecosystems and are expected to play an essential role in funding their restoration and sustainable use. Prominent pathways for private sector finance include philanthropic and corporate CSR funding and the voluntary carbon market, both through the purchase of off-the-shelf carbon credits and in investments into project development where carbon or other impacts are generated.

A Shared Vision of Quality

Establishing a unified vision for high-quality blue carbon projects is critical to unlocking capital at scale. The [High-Quality Blue Carbon Principles & Guidance](#), introduced at the UNFCCC Climate COP27 in 2022, was developed through a year-long consultation with stakeholders, including project developers, investors, scientists, and corporate partners including Meridian, Salesforce, and the World Economic Forum.

The core of this guidance was the establishment of five principles that define high-quality in the context of blue carbon, with a sixth later added by the Global Mangrove Alliance in the [Best Practice Guidelines for Mangrove Restoration](#).

Clear, consensus-driven principles enable conservation and restoration practitioners and project financiers to align around best practices that enhance project impacts, integrate communities, ensure long-term durability, and minimize reputational and regulatory risk.

Following release of the High-quality blue carbon (HQBC) Principles and Guidance, feedback from early adopters identified a demand for a structured approach to integrating the principles into project design and for clearly communicating alignment to stakeholders and prospective financiers. The [High-Quality Blue Carbon Practitioner’s Guide and Progress Wheel](#) were developed to meet this need and released for testing in 2024.

The High-Quality Blue Carbon Principles:

1. Safeguard Nature

- Preserve intact ecosystems and follow science-based ecological standards.
- Avoid harm via management of invasive species, leakage risk, and other ecological threats.

2. Empower People

- Ensure social safeguards, including Free, Prior, and Informed Consent (FPIC) and effective grievance and feedback mechanisms.
- Promote inclusive participation, gender sensitivity, equitable benefit-sharing, and community leadership.

3. Employ Best Information, Interventions & Accounting

- Select suitable interventions based on current science and local and indigenous knowledge.
- Demonstrate additionality, set robust baselines, and adopt transparent GHG accounting protocols.
- Implement adaptive management to refine interventions over time.

4. Operate Locally & Contextually

- Tailor project design to local ecological and social context.
- Build partnerships with local organizations and advocate for enabling policies.

5. Mobilize High-Integrity Capital

- Align finances with science-based targets and mitigation hierarchies.
- Manage financial risks and foster transparent reporting and benefit-sharing with communities.

6. Design for Sustainability (added by the Global Mangrove Alliance)

- Ensure project durability through risk assessment, longevity planning, and mechanisms guaranteeing long-term stewardship beyond the crediting period.

The Practitioner’s Guide and Progress Wheel

Drawing from the Society for Ecological Restoration’s “Recovery Wheel”, the Progress Wheel has been adapted specifically for projects in blue carbon ecosystems. This versatile tool is free and easy to use, and its design was informed by years of expert consultation and field testing across a variety of contexts. The integrated self-assessment framework provides a visual snapshot of a project’s alignment with the six principles, making it easier to track development progress, identify gaps and design activities specifically aimed at improving the project. Financers can better understand a project’s strengths and assess if activities they are funding are meeting the project’s biggest needs. It can be applied to any blue carbon project at any point throughout a project’s lifecycle and is not limited to those which produce carbon credits. It works by asking project managers to self-assess performance in key metrics by selecting the scenarios most aligned with their project in a multiple-choice framework. The tool then generates both a numerical score and an evaluation form that are represented visually via the Wheel (fig. 1).



Figure 2: The Progress Wheel enables project managers to align performance with the High-Quality Blue Carbon Principles. Adapted from: McDonald T., Jonson J. and Dixon K. W. (eds) (2016) National Standards for the Practice of Ecological Restoration in Australia. Restoration Ecology 51: 1-340. Modified with permission for the High Quality Blue Carbon Principles by Mark Beeston 2024.

The Progress Wheel consists of six sections—one for each principle. The colored 1–5 segments of each wedge indicate the degree to which the project aligns with the High-Quality Blue Carbon Principles and Guidance: the more area colored, the stronger the alignment.

It is important to recognize that project development is a continual process, and the progress of projects is subject to constant change. Lower scores do not necessarily equal low quality projects. Low-scoring criteria can identify areas where progress is at an early stage, not yet begun, or which have not performed as expected and require adaptive management interventions.

The numeric scores on the Progress Wheel can be interpreted as follows:

1	Progress in this area is minimal, represents a starting baseline, or has not yet begun. In a mature project, this may indicate cause for concern or identify additional funding/capacity building needs.
2	Progress in this area is at a basic stage. This may either be representative of an early-stage project progressing as expected, or an older project requiring updating or support to meet modern best practice criteria.
3	Progress in this area is in line with accepted best practice and is satisfactory across all criteria. This is representative of a high-quality project.
4	Progress in this area meets or exceeds current definitions of best practice and is representative of a very high-quality project.
5	This level of achievement is aspirational and represents an unusually high-quality project.

Projects will vary according to their unique context, time since initiation, technical capacity and resourcing. Progress along a timeline will also look very different for fully funded projects and those operating on a restricted budget, with some projects operating for years on minimal funds while seeking investment. **Readers are reminded when interpreting the wheel not to expect an early stage or underfunded project to have already implemented all the necessary activities to score highly.** Here progress scores provide context for targeted conversations between proponent and supporter around needs and expectations.

Implementing high-quality blue carbon projects is expensive. The two case studies for high-quality presented later in this document both produce carbon credits as part of a blended finance model, but do not currently break even on income from carbon credits alone. Instead, the majority share of credit revenues are channeled into community impact, with project partners raising grant income to cover annual operational expenditure and verification costs. Quality comes at a premium which is not yet reflected in credit sale prices, and it is challenging to implement a high-quality blue carbon crediting project without supplementary funding.

Irrespective of funding source, project proponents may make the decision to meet satisfactory high-quality implementation criteria across all areas and then prioritize investment in community outcomes, project longevity, or other impact. Recognizing the financial barriers inherent in high-quality project implementation, progression from 4 to 5 on this tool are deliberately linked to low-cost activities and key performance indicators such as increasing transparency of reporting, planning to transition to increased local management, or revising and upgrading safeguarding procedures – activities which can be carried out incrementally over time in a mature project.

The Practitioners Guide

The Progress Wheel is supported by Version 1.0 of the Practitioners Guide manual, which contains links to open access project development and management resources laid out to match the structure of the self-assessment framework.

Primarily intended for practitioners in the blue carbon space— especially those aiming to produce carbon credits—the guide empowers project proponents to deliver robust blue carbon projects that are credible, inclusive, and impactful. For project financiers, this translates into reduced risk and greater confidence in project integrity.



Each section links the user to a curated selection of tools, guidance, and references to support high-quality project design and implementation—over 70 in total. Resources include ecological restoration protocols, FPIC processes, online data platforms, carbon baseline methodologies, risk assessment and adaptive management tools, and community safeguarding frameworks.

Examples of best practice in action are provided through detailed case studies of blue carbon projects in different geographies and ecosystems.

As such, the Guide can also be used as a reference point for funders, financiers, NGOs, communities, and policymakers looking for specific information on the distinct processes involved in designing and operating any blue carbon initiative.

The *High-Quality Blue Carbon Practitioners Guide* translates market expectations of quality into actionable components that can be implemented on the ground, enabling investors, developers, and stakeholders to support projects that deliver measurable outcomes for climate mitigation, biodiversity conservation, and community benefit.

By establishing clear principles, tools, case studies, and up to date resources, it delivers a shared path forward, bridging the gap between high-quality ambition and real-world implementation. Combined with the Progress Wheel this creates a shared language and roadmap for scaling high-integrity blue carbon projects.

Building the framework

To apply the quality definitions described in the High-Quality Blue Carbon Principles and Guidance in practice, the Progress Wheel self-assessment framework aggregates more than 100 best practice activities and KPIs from the following high-integrity carbon crediting programs:

- VERRA [Community, Climate and Biodiversity \(CCB\) standard](#)
- The Gold Standard ([Safeguard Principles & Requirements](#))
- Plan Vivo Foundation [PV Climate and PV Nature standards](#)

And the following international development organizations/standards:

- United Nation Environment Programme ([UNEP environmental, social and sustainability framework](#))
- Food and Agriculture Organization ([Framework for Environmental and Social Management](#))
- The World Bank ([Environmental and Social Framework](#))

The order in which activities and performance indicators are presented in the Progress Wheel framework are benchmarked against lessons learned from the development and management of the Vida Manglar, Mikoko Pimoja, and Vanga Blue Forest blue carbon crediting projects.

Proof of concept

The initial release of the *Practitioner's Guide and Progress Wheel Version 1.0* in 2024 served as a prototype designed to support high-integrity blue carbon project development. These tools were subsequently tested across a range of real-world restoration initiatives, with feedback solicited from stakeholders operating in diverse geographic and institutional contexts.

In parallel, the Progress Wheel is being evaluated for its effectiveness as a communication and reporting tool. Its integration into monitoring reports, due diligence documentation, funding proposals, and dialogues with financial stakeholders, including investors and prospective credit purchasers, will inform future iterations and refinements.

Building on these insights, an enhanced *Practitioner's Guide and Progress Wheel Version 2.0* are currently under development, with publication anticipated in 2026. Version 2.0 further aligns high-quality criteria with emerging UNFCCC Article 6.4 Paris Agreement Crediting Mechanism (PACM) requirements, thereby strengthening its utility as a self-assessment framework for project developers and investors.

As adoption of the High-Quality Blue Carbon Principles continues to expand, uptake and application of the Progress Wheel has the potential to generate positive market signals. This can help direct capital flows toward credible, high-integrity blue carbon projects, reinforcing the development of a transparent, stable, and investable blue carbon ecosystem.

Progress wheel case study: Vida Manglar

The Vida Manglar blue carbon crediting project encompasses 7,500 hectares of mangrove in Colombia's Cispatá Bay, within the Sinú River basin. The project includes 12,000 local residents, comprising 435 families and 14 community-based mangrove organizations. Vida Manglar is certified by the VERRA Verified Carbon Standard and Community, Climate and Biodiversity standard, and is set to sequester close to one million metric tonnes of CO₂e over 30 years. Notably, recovery of the mangroves is due to hydrological restoration and active maintenance and monitoring, not mass planting approaches. As such, this project supports a naturally biodiverse ecosystem and is re-introducing previously depleted keystone species. By reinvesting over 90% of carbon-credit revenues into community-decided conservation and livelihood initiatives, including an endowment fund to support project longevity after the crediting period ends, the project exemplifies long term sustainable climate action that delivers both environmental and social benefits.

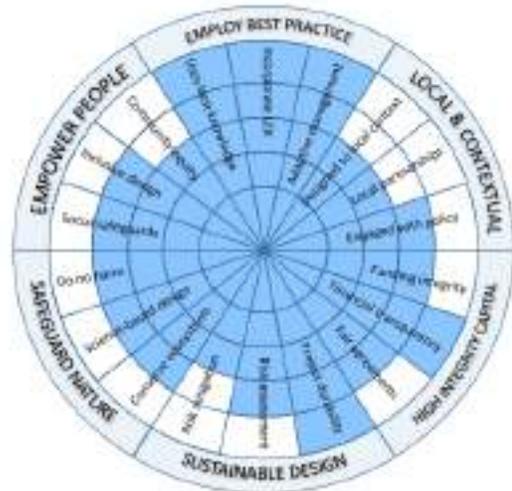
PERIODIC ASSESSMENT OF PROJECT QUALITY - HIGH QUALITY BLUE CARBON PRINCIPLES AND GUIDANCE PRACTITIONERS GUIDE

ASSESSOR: Diana Trujillo

TITLE:

DATE: 11/12/2019

HIGH-QUALITY PRINCIPLE	RECOVERY LEVEL (1-5)	SUPPORTING EVIDENCE
PRINCIPLE 1. Safeguard Nature		
Conserve ecosystems	4.3	
Science-based project design	4.9	
Do no harm	4.0	
PRINCIPLE 2. Empower People		
Local participants	4.0	
Inclusive design	4.2	
Community equity	3.7	
PRINCIPLE 3. Employ Best Practices		
Use best available knowledge	5.0	
Incorporate local knowledge	5.0	
Adaptive management	5.0	
PRINCIPLE 4. Operate Locally and Contextually		
Design according to local context	3.5	
Working with local partners	3.8	
Engage with policy	4.3	
PRINCIPLE 5. High Integrity Capital		
Funding integrity	4.5	
Financial transparency	5.0	
Fair agreements & contracts	4.7	
PRINCIPLE 6. (For Mangrove Breakthrough projects) Design for Sustainability		
Project durability	5.0	
Risk assessment carried out	4.3	
Risk mitigation	3.0	



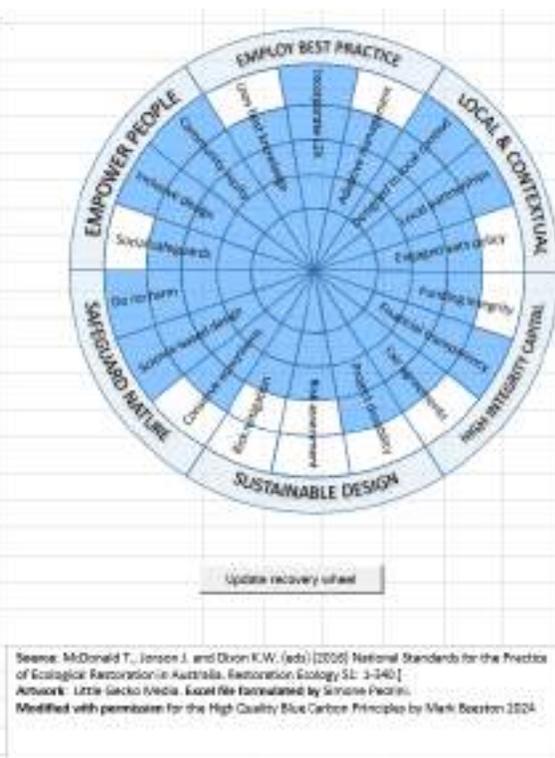
Update recovery wheel

Source: McDonald T., Jackson J. and Dixon K.W. (eds) (2016) National Standards for the Practice of Ecological Restoration in Australia. Restoration Ecology 31: 3-340.
 Artwork: Little Gecko Media. Excel file formulated by Simone Pedini.
 Modified with permission for the High Quality Blue Carbon Principles by Merit Becker 2014.

Progress wheel case study: Mikoko Pamoja

Mikoko Pamoja (“Mangroves Together”) is a community-driven blue carbon project in Gazi Bay, Kenya. The first blue carbon crediting project, by today’s standard Mikoko Pamoja would be considered a micro-project, protecting and managing 117 hectares of mangrove forest and certified by Plan Vivo’s PV Climate standard since 2012. The Gazi bay communities include around 1,081 households or roughly 5,400 residents. Mangrove deforestation was effectively halted through providing alternative wood sources and working in close partnership with the community to protect and rehabilitate degraded areas, including limited planting of new mangroves. The project sequesters 2,500 to 3,000 metric tons of CO₂ equivalent annually, with carbon revenues transparently invested into infrastructure projects decided upon by community members, including educational materials, clean water access for over 3,500 people, and alternative livelihoods.

DATE:		
HIGH-QUALITY PRINCIPLE	SCORE	SUPPORTING EVIDENCE
PRINCIPLE 1. Safeguard Nature		
Conserve ecosystems	4.0	
Science-based project design	5.0	
Do no harm	5.0	
PRINCIPLE 2. Empower People		
Social safeguards	4.0	
Inclusive design	5.0	
Community equity	5.0	
PRINCIPLE 3. Employ Best Practice		
Use best available knowledge	4.0	
Incorporate local knowledge	5.0	
Adaptive management	4.5	
PRINCIPLE 4. Operate Locally and Contextually		
Design according to local context	5.0	
Working with local partners	5.0	
Engage with policy	4.7	
PRINCIPLE 5. High Integrity Capital		
Funding integrity	4.5	
Financial transparency	5.0	
Fair agreements & contracts	4.7	
PRINCIPLE 6. (For Mangrove Breakthrough projects) Design for Sustainability		
Project viability	4.7	
Risk assessments carried out	3.5	
Risk mitigation	3.5	



Gazi Bay has been a focal point for mangrove research for decades, with long established partnerships between universities, the Kenya Marine & Fisheries Research Institute, and communities. Mikoko Pamoja grew out of this relationship, and this is reflected in the progress wheel in the unusually high performance in local partnerships, inclusivity and equity, and science-based design. The project operates not for profit, with the Association for Coastal Ecosystem Services charity established to provide technical support and additional fundraising. Financial reports are published annually and are freely available on the Plan Vivo website. Mikoko Pamoja demonstrates how small-scale, community-rooted carbon projects can deliver outsized climate and ESG (Environmental, social and governance) returns.

Applying the Progress Wheel in requests for proposals:

The Progress Wheel can be effectively incorporated into RfPs as a comparative assessment tool, enabling evaluators to distinguish between projects at varying stages of development and to assess the extent to which proposed implementation strategies align with definitions of high-quality.

Projects seeking funding or investment, or responding to an RfP, are encouraged to present multiple visualizations. These should illustrate both baseline and post-investment scenarios, thereby clarifying the anticipated impact of financial support. Such comparative visuals can help demonstrate how additional capital will accelerate progress toward high-quality outcomes.

For projects currently at an early stage or exhibiting limited progress, the Progress Wheel can be paired with a detailed development plan and a corresponding funding request. This approach allows proponents to transparently communicate their implementation planning and the specific financial inputs required, enhancing the credibility and investability of the proposal.



Project year 1



Current progress



With funding scenario

Applying the Progress Wheel in project portfolios:



The [Mangrove Breakthrough](#) is officially adopting the High-Quality Blue Carbon Practitioner's Guide and Progress Wheel Version 2.0 as a quality assurance tool across its global project portfolio. Each individual project included in the [Mangrove Breakthrough portfolio on the Restor.eco mapping platform](#) will be able to display the Progress Wheel visual on the front of their profile, enabling interested financiers to identify high-quality investment or funding opportunities.

This also allows the Breakthrough team to view at a glance the annual progression of projects within their global portfolio, identify the points at which financial or technical support are most commonly needed and tailor their efforts to address challenges at scale.



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