

MPA NEWS



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Funding MPAs by selling blue carbon credits: Practitioners from the first projects describe their experience so far

With the ongoing COVID-19 pandemic and economic downturn, MPAs face a challenging financial future. Tighter MPA budgets are likely as governments redirect funds to pandemic response, and as other revenue sources – particularly tourism – dry up for the foreseeable future.

As a result, MPA practitioners are considering alternative sources of revenue. Should blue carbon be one of these?

Blue carbon is the capture and storage of carbon in coastal and ocean ecosystems, such as mangroves, seagrasses, and tidal salt marshes. When MPA News reported on blue carbon back in 2016, it was still just a concept, discussed as a way that MPAs could help fight climate change. But now two MPA projects are implementing blue carbon strategies as a source of revenue – the first MPAs to do so. They are generating credits based on the tons of carbon their projects have captured and stored, then selling those credits to global buyers who want to offset their own carbon emissions.

This is a whole new way of monetizing MPAs. The timing is potentially good: the global market for carbon credits is expected to grow substantially as nations and other entities, like airlines, strive to meet various emission-reduction commitments. According to one of the projects selling blue carbon credits, the current demand for them may be as much as a thousand times greater than current supply.

That being said, there are plenty of challenges involved in generating and certifying blue carbon credits. And the two projects in operation are both very small in scale: it remains to be seen whether blue carbon could be scaled up to meet market demand. This month, MPA News speaks with practitioners from the two MPA projects – both mangrove restoration initiatives – that are forging a path for blue carbon finance, to learn what their experience has been like so far.

Editor's note: MPA News recognizes that the concept of enabling polluters to offset their carbon emissions by purchasing carbon credits is controversial. Such a system allows polluters to keep polluting. And there is always a chance that carbon storage projects will fail, releasing their carbon right back to the atmosphere. A restored mangrove forest, for example, could be chopped down illegally and turned into charcoal. However, carbon offsets are already part of various existing carbon-trading schemes, and will be included as part of the Paris Agreement's approach to combating climate change. In the context of MPAs, they represent a novel approach to financing, and a way to monetize sites in a manner that rewards making ecosystems healthier and more productive.

Seeing a high demand for credits: The Tahiry Honko project in Madagascar

In southwest Madagascar, the Tahiry Honko project is conserving and restoring mangrove forests within the Velondriake Locally Managed Marine Area, an MPA. The project goal is to support sustainable mangrove management and economic security in the region. In the local dialect, *tahiry honko* means 'preserving mangroves'.

Started in 2018, the project conserves and restores over 1200 hectares (12 km²) of mangrove forest, and is generating over 1300 carbon credits per year as the trees grow larger and store more carbon. (One carbon credit is equal to one metric ton of carbon stored.) The project anticipates an annual income from carbon credit sales of US\$27,000 for the next 20 years. Of that, 50% goes to local villages to support infrastructure construction, education, and healthcare; and 23% goes to the local marine management association that leads the project, to support MPA management. The remainder covers project expenses.

The project has already sold all of its 2018, 2019, and 2020 credits and is marketing its anticipated credits from 2021 onward. Although there are various national-level carbon markets in which heavy industries are required to offset their emissions, these *compliance markets* do not currently sell blue carbon credits. As a result, credits from Tahiry Honko and other blue carbon projects are sold on what's called the *voluntary carbon market*, to buyers that have set their own voluntary offset commitments. In both types of markets, credits must be certified by a reputable entity to demonstrate they meet various criteria. The Tahiry Honko project uses [Plan Vivo Foundation](#) as its credit certifier.

Leah Glass is the Mangrove Technical Lead at Blue Ventures, the NGO that technically supports the project.

MPA News: Leah, how much demand are you seeing so far for your blue carbon credits?

Leah Glass: We have seen very high demand for Tahiry Honko carbon credits, in part due to the low number of blue carbon projects on the market. The demand is much higher than we can supply. For instance, we've had several buyers interested in purchasing hundreds of thousands of credits per year. And in one case over a million.

However, that was pre-COVID. While we still have many buyers coming to us for credits (which is reassuring for the fight against climate change), the economic implications of the global lockdown will undoubtedly decrease the funds that companies make available for CO₂ emission mitigation and offsetting. For instance, pre-COVID we saw strong demand from the aviation and tourism sectors, which have obviously been heavily impacted by the global lockdown.

While we are yet to feel the impact of this decrease in demand and are not overly concerned due to the relatively small number of credits we have to sell each year, the potential effect of COVID on companies' environmental strategies is a risk for any larger blue carbon projects in the pipeline.

MPA News: What are the main challenges that Tahiry Honko has faced so far?

Glass: Mangroves inhabit a unique environment at the transition of land and sea. While this presents many opportunities, from a policy perspective it can also lead to conflicting legislation because mangroves are at once both terrestrial and marine. To overcome these challenges, it is necessary for projects to work closely with both the relevant forest and fisheries authorities.

Also from a policy angle, in many countries carbon-specific legislation is still in its infancy and not always fully inclusive of mangroves. While Madagascar now has a relatively mature and clear carbon policy framework, the project did encounter challenges as it was developed simultaneously with this framework. Close collaboration with, and support from, the national REDD+ body was vital for project success. [Editor's note: [Reducing emissions from deforestation and forest degradation, or REDD+](#), is a UN mechanism that offers incentives to developing nations for sustainable forest management.]

The other major challenges faced by the project are the costs and reporting associated with certification. The Tahiry Honko project is in an arid, low-carbon region, meaning the carbon benefits per hectare of mangrove conservation and restoration are lower than they are in other parts of the tropics. Thus, the annual income is less than would be the case for the same size project in higher productivity systems, such as those found in southeast Asia. Our carbon revenue, if sold at the average price for forestry-related carbon offsets on the voluntary market (US\$3.20 per metric ton, according to [the most recent report](#)), would not be enough to cover certification and verification costs. We knew this would likely be the case from the outset but took on the challenge as an element of developing and learning within the emerging sector. Incidentally, this shortfall would likely also be the case for *smaller* projects in more carbon-rich environments – meaning that, in the current certification context, projects need to be a certain minimum size to be financially viable. This can be a challenge for community organizations working over smaller areas, however effective their management is.

Thankfully, at the moment we are selling our credits for significantly more than the average market price, due in part to the rarity of blue carbon credits. So project costs are being covered by carbon revenue – so far. However, if more projects were to come onto the market and supply levels were to get closer to demand, we might not be able to command the same price for our credits. Time will tell. This is a 20-year project and in the current context it's hard to see too far into the future.

Lastly, Blue Ventures believes that marine management is most effective when conservation models work for people, showing that effective marine conservation is in everyone's interest. While Plan Vivo has done its best to make its project certification and verification processes simpler, the complexity is still a barrier to many community organizations being able to verify carbon impact and access finance without strong support from an English-speaking organization (like Blue Ventures). The certification, reporting, and verification processes need to be democratized in order to create a truly accessible carbon standard.

MPA News: If an MPA manager came to you and asked what steps they could take to start monetizing their blue carbon, what advice would you give them?

Glass: The first advice would be to listen. Blue Ventures focuses on understanding the barriers to effective marine management that communities face. What are the needs on the ground, and could a carbon project help to address these needs? To answer this, a broad understanding of the potential carbon income is necessary, but at these initial stages national or default values can be used. Do not be overwhelmed by the carbon science aspect of blue carbon projects! There are various manuals available – such as [this excellent one](#) produced by the Blue Carbon Initiative (also available in Spanish and Chinese) – that can help with this.

If it is decided that blue carbon is a suitable approach, the next step must be the participatory development of the management plans and actions that will underpin the project. We have written about our experiences [here](#). Marine resource use is complex and underpins livelihoods, so never underestimate how long this process takes. Without effective management that has the full buy-in of all stakeholders, you won't have a carbon project.

Once this important step is underway, you can start the activities that are unique to carbon projects. This includes calculating the potential scale of the CO₂ emission reductions and removals, defining the monitoring and reporting framework, and supporting project partners to define a benefit-sharing scenario.

The last piece of advice would be to not try to fit a square peg in a round hole. With the certification options currently available to projects, not all management initiatives will be able to access carbon finance. In dollar terms, the carbon value of coastal ecosystems is often far outweighed by those of other ecosystem goods and services, such as fisheries. If carbon isn't viable, look into these other assets as potential funding mechanisms for blue carbon systems and the marine landscape more broadly. These are incredibly valuable ecosystems and we must work as a sector to develop approaches that enable communities to sustainably realize their full value.

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Looking to expand: The Mikoko Pamoja project in Kenya

In Gazi Bay on the southern Kenya coast, local communities have signed an agreement with the national government to allow them to manage a designated area of mangroves. In this locally managed marine area, the [Mikoko Pamoja](#) project is protecting 117 hectares (1.17 km²) of the bay's 615 hectares of mangroves, and planting 4000 trees annually in the degraded intertidal areas. *Mikoko Pamoja* means 'mangroves together' in Swahili, which is the project's whole mission – to partner together in conserving mangroves.

Mikoko Pamoja was launched in 2013 and is managed by three groups: a community organization that consists of representatives of Gazi Bay villages; a steering group that provides technical support; and the project coordinator, the Association for Coastal Ecosystem Services (ACES), a charity registered in Scotland. Plan Vivo is the third-party verifier of the carbon credits.

Mikoko Pamoja stores an average of 2500 metric tons of CO₂ annually. In 2019, the project sold a total of 1912 credits, after a risk buffer was deducted. The sale generated US\$23,255 for an average of \$12.16 per credit. Project coordinator ACES is in charge of selling the credits on the voluntary carbon market. Buyers so far have included individuals, conferences, universities, and companies seeking to promote their green credentials.

Of the revenue from credit sales, 65% goes to support community development projects, including provision of schoolbooks, construction of school buildings, and the provision of clean drinking water. The rest of the carbon income is used to pay salaries and wages for the project coordinator and community members working for the project.

James Kairo is a Forest Carbon Specialist and a Project Developer for Mikoko Pamoja.

MPA News: What challenges have you faced so far with Mikoko Pamoja?

James Kairo: Blue carbon projects are a simple concept but quite complicated to implement. Our success so far with Mikoko Pamoja has been due to good science, strong community, government support, and a good network of international actors. But this has not been without challenges, and as the first community-led project to restore and protect mangroves through the sale of carbon credits, we have had to overcome quite a few. The main one has been community over-expectations related to carbon projects, including in terms of the amount of revenue that can be generated. We have also suffered from the lack of similar reference projects, and have had to rely on terrestrial projects, which are not the same. And we have had the problem of fluctuating carbon prices in the international market.

MPA News: If an MPA manager came to you for advice on getting started with blue carbon, what would you say?

Kairo: The best place to start would be the [Blue Carbon Primer](#), which was published earlier this year by CRC Press. It has a wealth of information on coastal wetland science, policy, and practice. We contributed a case study on Mikoko Pamoja to it, describing our step-by-step process.

MPA News: Mikoko Pamoja is looking to expand into seagrass restoration, and selling carbon credits from that as well. What is the status of those efforts?

Kairo: Initial consultations with the local Beach Management Unit have started. In Kenya, Beach Management Units are the co-management bodies on fisheries issues, combining local and national management. Since seagrasses are associated with supporting fisheries, they are managed through BMUs. Mapping of the seagrass around Gazi as well as ecological baselines have been carried out, and we have revised the Project Document to incorporate seagrass. But we are not at the point yet of selling any credits from seagrass.

MPA News: What factors did you consider in choosing a third-party verifier?

Kairo: Our choice of Plan Vivo was related to the low volume of our verified emission reductions, which may have been too small for other verification bodies, and the relatively short turn-around time in working with Plan Vivo compared to other bodies. However, we are now in talks with communities in Mozambique and Tanzania to conduct similar but larger projects there, and we are considering using another verifier for those due to the huge potential volume of carbon.

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Verifying that the carbon credits meet a standard: Plan Vivo Foundation

As mentioned earlier, for carbon credits to be sellable (either on compliance markets or the voluntary market), they must be certified by a third-party verification body. Such a body ensures that a project meets certain criteria. One criterion, for example, is that the stored carbon must be *additional* – meaning a project's activities lead to lower atmospheric CO₂ levels than would have happened under business as usual. (In other words, a project cannot sell credits for a mangrove forest that already existed before the project.) The verifier visits the project site annually to monitor and audit the amount of ongoing carbon storage.

There are several third-party verifiers for carbon credits, including a few that offer blue carbon methodologies. The verifier chosen by both Tahiry Honko and Mikoko Pamoja to certify their credits is Plan Vivo Foundation, based in the UK. Plan Vivo places a strong emphasis on equitable benefit sharing: when it partners with a carbon project, it requires that a certain percentage of the project's income from the sale of credits goes to community partners.

Chris Stephenson is Head of Operations for Plan Vivo Foundation.

MPA News: The Tahiry Honko and Mikoko Pamoja projects are the first cases in which Plan Vivo has certified blue carbon credits. Normally you certify terrestrial carbon. Have you faced any challenges with blue carbon?

Chris Stephenson: Plan Vivo has always been interested in new scientific developments, and new tools to measure carbon mitigation benefits. The carbon sequestration benefits of mangrove systems and the associated sediments, as well as the climate adaptation benefits of restoring and protecting at-risk mangrove forests, are very clear in the literature.

What has been challenging are the significant uncertainties that can relate to dynamic systems such as these. Look at seagrass, for example. Some evidence suggests that the carbon storage capacity of seagrass and associated sediments may be even higher than for mangroves; yet, to date, methodologies to credit these benefits in seagrass are not commonplace. This can be discouraging when trying to look at whole systems – including, say, mangroves, seagrass, and other habitats in proximity – that may involve multiple interventions and activities. Monitoring blue carbon systems can also be costly compared to terrestrial systems, and accessing the sites can be challenging, as well as finding suitable reference areas to demonstrate project effectiveness.

With systems like these that display higher levels of uncertainty, very conservative estimates of biomass increments and, potentially, soil carbon accumulation must be used. This suggests that certification currently is only able to credit a portion of the real climate benefits.

To go some way toward compensating for all this, a suite of adaptation and livelihood benefits and a good narrative describing a project's aims can help blue carbon credits command higher prices than similar (mostly terrestrial) projects that involve Agriculture, Forestry, or Other Land Use, or AFOLU.

MPA News: Do you have a sense yet of how large the market for blue carbon credits could become?

Stephenson: From chats and anecdotal experience, it seems there is high demand for these credit types – particularly from potential buyers or supporters that have a direct link to the health of the oceans, and also tourism companies. However, it is a very small market currently in terms of supply.

MPA News: What advice would you give MPA managers who are considering whether blue carbon is right for them as a source of revenue?

Stephenson: It is important to be realistic about the costs involved in such projects, and to consider scale early on. While small sites may offer the best way to start an initiative as they are more

manageable, carbon projects in the AFOLU sector generally need to reach a certain size, so that the costs of third-party audits, certification, monitoring, and other operations make sense in the overall scheme of things. Economies of scale can be important.

A certification organization such as Plan Vivo may well be the right choice. We encourage new potential initiatives to contact us as well as those initiatives that have pioneered approaches in the space to understand the challenges and to learn from adaptations they have already made.

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Revision: On 9 October 2020, this article was revised to provide carbon credit sales figures for 2019 for the Mikoko Pamoja project.

Editor's note: In our next issue, MPA News will explore the future of blue carbon credits, including the possibility of selling carbon credits based on the biomass of an MPA's fish, whales, and other wildlife. How realistic is it?

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