



Concept of Blue Carbon Credits: Investing in Coastal Ecosystems for Mitigating Climate Change Impact

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Coastal habitats cover 2 per cent of the ocean's surface but store 50% of the carbon in their sediment. They're a 75-gigaton carbon sink, which is equal to 8 years of carbon emissions from fossil fuel. The bad news is that these ecosystems are under threat – between 25% and 50% of marine habitats have gone in the past 100 years, according to the UN panel. So, unlocking investments for this field through blue carbon can be the solution to saving these ecosystems. (Hilmi *et. al*, 2021). Blue carbon is a new concept which refers to carbon that's stored in marine ecosystems mentioned earlier. Those ecosystems are providing a couple of ecological services like shoreline protection and water quality maintenance. More remarkably, blue carbon gains more attention as a potential source of carbon credits as they can capture and store huge amounts of carbon for long periods of time. In fact, research found that coastal wetlands and seagrass beds suck in carbon up to 40x faster than tropical rainforests. This makes them a valuable resource for mitigating climate change. But as it's still in its early stage, there are many challenges that have to be fixed before it can be fully integrated into the global carbon market. Fortunately, as there's growing interest and momentum around the world to develop blue carbon projects. And many of these organizations continue to develop standards and methodologies to measure and verify the CO₂ stored in coastal ecosystems.

How is a blue carbon credit generated?

When an ecosystem like a seagrass meadow is protected or restored, it can capture CO₂. If this carbon capture is quantified and verified, it generates blue carbon credits. These credits are tradable on carbon markets for entities wanting to offset their GHG emissions. The revenue from the sales of blue carbon credits can then help fund the conservation and restoration of those ecosystems. To ensure that blue carbon credits are verifiable, they must meet established standards for carbon accounting and verification, such as the Verified Carbon Standard or the Gold Standard. The standards help make sure that the credits are indeed real, measurable, and verifiable carbon reductions and the projects that produce them meet the criteria. So far, the most popular projects are on restoring mangroves around the world. Mangroves have been estimated to prevent ~\$65 billion in property damages and lower flood risk to millions of people each year. Factor in their ecosystem service benefits projected to be at the range of \$462 to \$798 billion every year, and you get the picture how crucial their role is (Hilmi *et. al*, 2021).

Three ways on how to invest in blue carbon credits

Investing directly in blue carbon projects: While we can't tell the exact number of companies developing blue carbon projects, there are many companies and organizations that

are currently involved in this field. Many companies are also interested in investing in these projects as a means to mitigate their carbon footprint and contribute to the conservation of coastal ecosystems. Some big names include Microsoft, Airbnb, and Shell. There are also many non-profit organizations and government agencies that are taking part in blue carbon conservation and restoration efforts. Some blue carbon project developers may offer investment opportunities for you. These investments can be in the form of equity or debt financing. And the returns you get can vary depending on the project's success.

Investing in blue carbon funds: If you prefer a more liquid investment opportunity, then you may want to invest in blue carbon funds. Some investment funds are focusing on blue carbon. This investment scheme can give you exposure to a diversified portfolio of blue carbon projects. Plus, the funds can also give you a more accessible way to invest in blue carbon credits than the first option above.

Buying blue carbon credits on the VCM: One last way for you to make your money grow with blue carbon is to purchase the credits on the VCM. There are now a lot of platforms that allow you to buy carbon credits from blue carbon projects. You can use these credits to offset emissions or you can have them as a form of investment. But just remember to do your research to ensure that the credits you buy are from legitimate blue carbon projects. So, there you have it. The ways how to put your money into the market and grow it.

How to Buy Blue Carbon Credits: One big question you would want to know first is how much a blue carbon credit is worth? Just like other types of carbon credits, a blue carbon credit's price is influenced by several factors.

Location of the project is one factor. In Asia and Central America, each credit for blue carbon projects costs the range between \$13 – \$35 (Nellemann and Corcoran, E. Eds., 2009). You can also buy blue carbon credits in many ways. Here are your few options, which are basically the same as the ways how to invest in blue carbon projects:

Purchase credits on the VCM: Blue carbon credits are traded on the VCM as one among the different types of credits available. Though not all of the companies selling carbon credits may have blue carbon credits in particular. You will know by visiting their website to see what projects those credits are from. The voluntary market is rich with different platforms trading blue carbon credits. But then again, see to it that the credits you buy are real and verifiable.

Buy through investment funds: You can also get the credits specifically from investment funds or ETFs (exchange-traded funds). These funds also come in different types so pick the one that's into blue carbon projects. They offer investors the opportunity to earn returns while also financing the development and deployment of coastal and marine ecosystems. So, if you decide to buy through these funds, you'll expose yourself to diversified funds with different risks.

Direct investment: Lastly, you can also get the credits through direct investment in the project of your choice. You can buy them either in the form of equity or debt financing. The latter may offer higher returns for investors but they also come with bigger risk. If you decide to pick this last option, you may need to make sure that the project satisfies the established criteria and standards for blue carbon accounting and verification. You may also want to consider any co-benefits that the project provides such as local job creation and biodiversity conservation. The important thing is that your purchase aligns with your goals.

Policy Inclusion and Global Cooperation

Incorporating blue carbon into national and international climate policies is essential for its conservation. About 151 countries have at least one blue carbon ecosystem, and 71 countries contain all three types of BCEs. The inclusion of coastal wetlands in Nationally Determined

Contributions (NDCs) under the Paris Agreement presents a significant opportunity to integrate blue carbon ecosystems into global climate strategies.

International cooperation through initiatives like the International Partnership for Blue Carbon (IPBC) and the Global Mangrove Alliance is vital for the protection and sustainable management of BCEs. These partnerships provide a platform for governments, non-governmental organizations, and research institutions to collaborate on protecting and restoring global coastal blue carbon ecosystems.

Conclusion

Blue carbon ecosystems are indispensable in the global effort to mitigate climate change. Their ability to sequester vast amounts of carbon, support biodiversity, and enhance coastal resilience makes them a priority for conservation. However, to fully realize their potential, it is essential to address the challenges posed by climate change and human activities through targeted policies, restoration efforts, and international cooperation. The conservation of blue carbon ecosystems must be integrated into global climate strategies to ensure a sustainable and resilient future.

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