Blue Carbon: The Greater Caribbean's Solution to Global Emissions

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Every year on September 21, the world observes Zero Emissions Day, uniting under a simple yet profound mandate: "*Give our planet one day off a year*". This commemorative day sets out to encourage individuals, industries, and governments to halt or drastically minimize their emissions for 24 hours, raising awareness about our collective carbon footprint and the urgency of the global climate crisis (UC Merced, 2023).

For the Greater Caribbean, however, a single day's pause is a stark reminder of an asymmetric global reality. Collectively, Small Island Developing States (SIDS) and coastal nations across the Caribbean region contribute less than 0.5% of total global greenhouse gas (GHG) emissions (UN DESA, 2023). Yet, our communities sit on the direct frontlines of climate disruption, forced to confront intensified hurricanes, rising sea levels, and devastating coastal erosion.

Achieving true long-term carbon balance requires a dual commitment: rapidly decarbonizing human activity and actively protecting nature's most potent carbon sinks. As the Association of Caribbean States (ACS) marks Zero Emissions Day 2026, we spotlight our blue carbon ecosystems. These are our mangroves, our seagrass meadows, and our coastal wetlands which act as our region's most vital natural defense and climate mitigation strategy.

Historically, coastal wetlands were evaluated primarily as geographical buffers against

storms or as nursery grounds for marine fisheries. Over the past decade, scientific recognition of their important role in global carbon sequestration and climate mitigation has grown significantly.

While carbon sequestration discussions have traditionally centered on "green carbon", stored in forests, cropland, and pastures, the far greater potential lies in "blue carbon." Marine organisms account for approximately 55% of the carbon captured globally through biological processes, while coastal ecosystems, including mangroves, salt marshes, and seagrasses have been found to sequester carbon at higher rates and store for longer periods (Nellemann et al., 2009). Coastal blue carbon habitats, particularly mangroves and seagrass beds, capture and sequester carbon at rates estimated to be four to five times faster per hectare than boreal, temperate, and tropical highland forests (Choudhary, 2024; Alongi, 2022). Beyond their high sequestration rates, undisturbed, healthy blue carbon ecosystems can retain carbon for millennia, while carbon stored in terrestrial trees may be released into the atmosphere within decades(McKenzie et al., 2020). This capacity for long-term carbon storage reinforces the importance of protecting and restoring blue-carbon ecosystems as part of broader climate-mitigation strategies.

The value of blue carbon ecosystems cannot be overstated for Latin America and the Caribbean. This region is home to about 23% of the global total mangrove extent (calculated from FAO, 2020 Global Forest Resources Assessment regional data), and, according to McKenzie et al. (2020), the "Tropical Atlantic" seagrass bioregion — which spans the Caribbean, Gulf of Mexico, and the Atlantic coasts of Central and South America — holds about 41% of the global seagrass area. Together, these figures show that our region holds a significant share of the world's mangroves and seagrasses, which serve as biodiversity hotspots, breakwaters against wave energy, barriers against natural hazards, and essential carbon sinks for reducing emissions and mitigating climate change.

When these coastal environments are destroyed or degraded, they transition rapidly from essential carbon sinks into major emissions sources, releasing gigatons of stored carbon back into the atmosphere (IUCN, 2017). Thus, safeguarding coastal ecosystems is both a mitigation necessity and an economic imperative for our region.

To move from environmental policy to structural regional impact, the ACS leverages its high-level political platform to secure collective commitments to marine preservation and climate resilience across its Membership. A cornerstone of these institutional efforts are the Declaration of Antigua Guatemala (2023) and the Declaration of Montería (2025), through which Member States and Associate Members committed to advancing a regional "Blue Agenda" and to the coordinated management of the Greater Caribbean's shared marine resources, explicitly naming mangroves, reefs, and seagrasses as ecosystems requiring joint protection. By anchoring these commitments in shared regional frameworks, the ACS ensures that the nations of the Greater Caribbean do not act in isolation, but rather mobilize technical and financial resources through structured South-South and triangular cooperation to safeguard the region's shared marine heritage.

The ACS actively translates high-level political agreements into actionable interventions

through structured capacity-building initiatives and strategic regional restoration partnerships. Recognizing seagrass meadows as vital blue carbon ecosystems that play a disproportionately powerful role in long-term carbon sequestration, the ACS leveraged its diplomatic channels and convened key stakeholders to join the 2026 edition of the Blue Carbon Course hosted by Agencia Presidencial de Cooperación Internacional Colombia (APC), Conservation International (CI), and INVEMAR. By engaging in this course, the ACS turned shared environmental priorities into active capacity building, driving regional efforts to protect, restore, and conserve these high-value marine sinks. Delegates across the Greater Caribbean and ASEAN region, were brought together in Santa Marta, Colombia, stepping directly into the protected seagrass meadows of Tayrona National Park to master field-level carbon stock accounting and ecosystem management. To ensure lasting capacity, the Course concluded by connecting attendees to a virtual, multi-tier training platform, equipping regional experts with the exact tools needed to integrate blue carbon assets into national climate finance frameworks, voluntary carbon offset markets, and national mitigation strategies.

Looking to scale these efforts regionally, the ACS is actively working in partnership with Conservation International toward the prospective rollout of a major initiative titled "Greater Caribbean Leadership for Climate-Smart Coastlines: Restoration, Resilience, and Policy". The project aims to execute large-scale, science-based mangrove and seagrass restoration alongside the creation of a Regional Knowledge Hub. The primary objective focuses on expanding carbon sequestration capacity to drive meaningful atmospheric emission reductions, while simultaneously embedding blue carbon ecosystems into national climate policies like Nationally Determined Contributions (NDCs) and National Biodiversity Strategy Action Plans (NBSAPs). By empowering vulnerable coastal populations, particularly women, youth, and communities of African descent, with sustainable blue-economy livelihoods and protective natural buffers, this emerging initiative represents a holistic approach to regional net-zero goals and climate resilience.

Zero Emissions Day is a vital yearly check-in for the global conscience. Pausing human emissions for 24 hours proves what is possible when humanity acts in unison. However, for the nations of the Greater Caribbean, stopping new emissions is only half of the equation.

By conserving, restoring, and sustainably managing our coastal blue carbon ecosystems, the ACS and its Membership are working to draw down legacy atmospheric carbon while fortifying our islands and coastal zones against climate shocks. Through strategic partnerships, South-South cooperation, and science-based field execution, the Association of Caribbean States remains steadfast in building a resilient, climate-smart Greater Caribbean, securing our shared ocean heritage for generations to come.

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