

Kenya Coastal Mangrove Case Study — Gazi Bay (Investor Summary)

Prepared: 22 October 2025 • Region: Gazi Bay, Kwale County, Kenya

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Executive summary

Community-led mangrove conservation in Gazi Bay has demonstrated measurable carbon sequestration, coastal protection and revenue generation through voluntary carbon credits. Proven projects (e.g., Mikoko Pamoja) provide a model where community governance and conservative carbon accounting create investable blue carbon outcomes.

Key project metrics (illustrative)

- Area under conservation: ~ 200 ha (community-managed zones)
- Estimated average carbon stock (Total Ecosystem Carbon): ~ 500 Mg C ha⁻¹ (soil-heavy pools)
- Estimated CO₂e (stock) per ha (converted): ~ 1,834 tCO₂e ha⁻¹ (Mg C → CO₂e conversion x 3.667)
- Recent verified credits sold (project historic): ~ 18,000 tCO₂e (2014–2023, project reports)
- Community revenues to date: ~ US\$ 144,000 (reported project receipts)

Why invest?

- High carbon density: mangroves store large carbon pools, especially in soils.
- Co-benefits: fisheries, shoreline protection, biodiversity and direct livelihoods.
- Proven delivery: community projects in Kenya have sold credits on voluntary markets.

Risks & mitigations

- Baseline uncertainty: Periodic soil sampling, conservative IPCC defaults
- Governance: Escrowed payments; transparent community funds; independent audits
- Permanence & leakage: Insurance buffers; registry permanence rules; conservative buffer pools

Monitoring & verification

- Community-led dMRV (ground plots + sample cores)
- Remote sensing and change-detection
- Third-party validation to verified registry standards (e.g., Verra)

Selected sources (peer-reviewed & project reports)

- Musyoka NM. (2015). Carbon Stocks and Sequestration Potentials in Gazi Bay (University of Nairobi thesis).
- Kairo et al. (2021). Total Ecosystem Carbon Stocks of Mangroves in Lamu (Frontiers).
- Mikoko Pamoja project reports & community revenue summaries (project documentation).
- Commonwealth / UNEP case studies on Gazi Bay restoration and blue carbon.
- ScienceNews reporting on Gazi Bay mangrove carbon figures.

Assumptions & mock-data note:

Where site-specific measurements were unavailable or not public, conservative regional averages and IPCC defaults were used. Mock/assumed items are marked in this PDF by the text 'illustrative' or 'approximate'. Full citations and links are provided in the web component.

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