



MINISTRY OF MINING, BLUE ECONOMY
AND MARITIME AFFAIRS

MINISTRY OF ENVIRONMENT
CLIMATE CHANGE AND FORESTRY

Kenya's Blue Carbon Ecosystems-Nationally Determined Contributions Implementation & Investment Plan (2025-2035)

*A National Framework for High-Integrity
Blue Carbon Actions, Climate Resilience,
and Sustainable Coastal Development*

Abridged Version



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How to cite this document: Government of Kenya (2026). *Kenya's Blue Carbon Ecosystems-NDC Implementation and Investment Plan (2025–2035)-Abridged Version*. Ministry of Mining, Blue Economy and Maritime Affairs; Ministry of Environment, Climate Change and Forestry, The National Treasury. Nairobi, Kenya, 20 Pages.

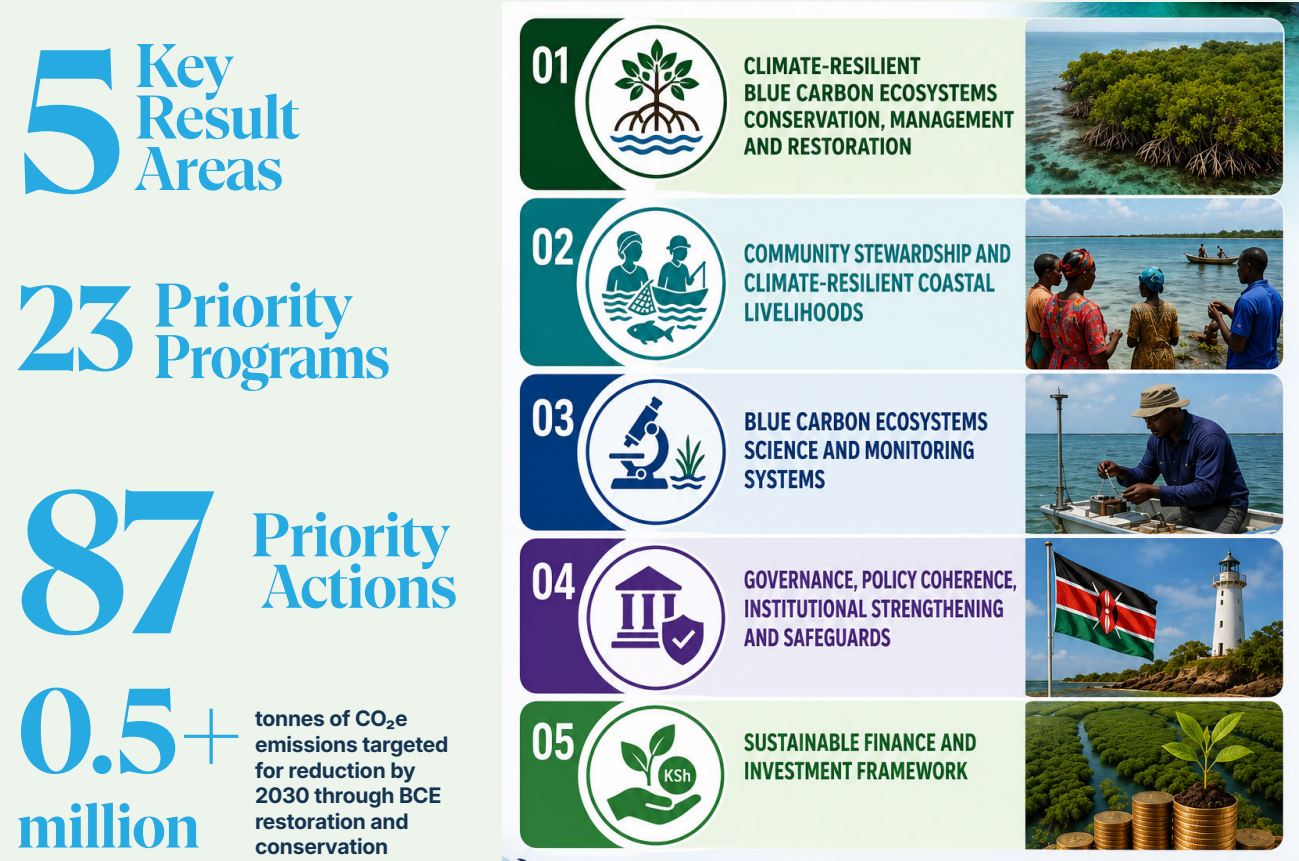
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Published by:
Ministry of Mining, Blue Economy and Maritime Affairs
Ministry of Environment, Climate Change and Forestry
The National Treasury

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The Plan at a Glance

This Implementation and Investment Plan defines Kenya’s long-term vision for positioning ocean-based Blue Carbon Ecosystems as a key pillar of national climate action, coastal resilience and a sustainable blue economy. It consolidates commitments from the 2020–2030 and 2031–2035 Nationally Determined Contribution (NDC) cycles into a cohesive strategy focused on the restoration, protection, scientific research, community stewardship and sustainable financing of coastal wetlands—especially mangroves and seagrass beds. The plan reflects the Government of Kenya’s commitment to high-integrity ocean climate actions and outlines the measures required to safeguard these critical ecosystems while enhancing the resilience and prosperity of coastal communities.



Chapter 1 Introduction

Kenya’s Blue Carbon Ecosystems (BCEs), which include approximately 61,000 ha of mangroves and 39,000 ha of seagrass beds, cover less than 0.2% of the country’s land area. Despite their small size, these ecosystems provide significant ecological and climate benefits by protecting shorelines, supporting fisheries, sustaining coastal tourism, conserving biodiversity and promoting emerging blue economy sectors. These ecosystems are among Kenya’s most carbon-dense, storing massive amounts of carbon and making an important contribution to national greenhouse gas reduction. Since 1990, BCEs have stored over 75 million tonnes of CO₂ equivalent, accounting for approximately 7% to 14% of Kenya’s total Land Use, Land Use Change and Forestry (LULUCF) sequestration. This contribution is disproportionately large in comparison to their area, highlighting the strategic importance of BCEs as a high-impact mitigation wedge in the land sector. However, Blue Carbon Ecosystems are under increasing threat from human activities and environmental factors. Since 1990, mangrove cover has decreased by 15% and seagrass

beds by 6%. The degradation of these ecosystems has reduced fisheries productivity, weakened shoreline stability, and undermined long-term resource sustainability. This highlights the importance of safeguarding BCEs as Kenya progresses towards a sustainable blue economy and fulfils its commitments under the Paris Agreement.

To address these challenges, Kenya developed the Blue Carbon Ecosystems Nationally Determined Contribution Implementation and Investment Plan (BCE-NDC I&IP) for 2025-2035. This plan establishes a coordinated framework that is consistent with key national policies, including the Climate Change Act (Cap 387A), the National Climate Change Action Plan III, the Blue Economy Strategy, and the Bottom-Up Economic Transformation Agenda (BETA). By improving ecosystem restoration, governance, financing, and community engagement, the BCE-NDC I&IP positions blue carbon ecosystems and their associated value chains (Figure 1) as critical pillars for climate resilience, sustainable livelihoods, and inclusive coastal development.

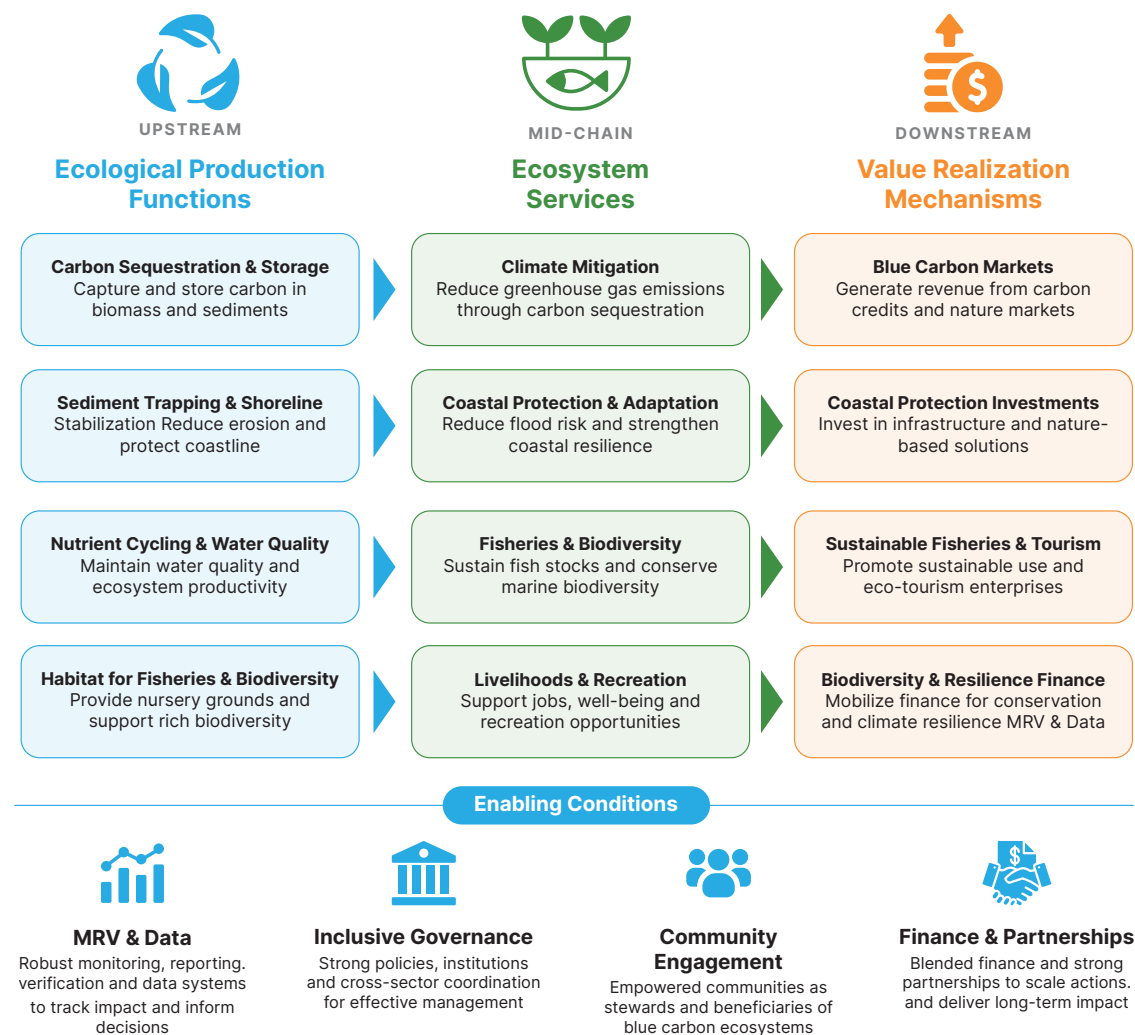


Figure 1.1: Valuing blue carbon ecosystems

1.1 The Development Process

The BCE-NDC Implementation & Investment Plan was developed collaboratively by the Ministry of Mining, Blue Economy, and Maritime Affairs, and the Ministry of Environment, Climate Change, and Forestry; utilizing a hybrid approach that combined a Technical Working Group (TWG) and expert consultants. The TWG, comprising government agencies, development partners, and community organizations, ensured both technical rigor and broad stakeholder inclusion.

Key issues impacting blue carbon ecosystems were identified through comprehensive stakeholder consultations and

workshops conducted across the coastal counties, involving local communities, experts, and policymakers. Public feedback informed the prioritization of actions centered on restoration, conservation, sustainable management, and community engagement. These priorities were validated during the National Validation Workshop and a high-level breakfast meeting with leaders from Jumuiya ya Kaunti za Pwani (Coastal Counties Economic Block), ensuring alignment between county and national objectives.

Chapter 2

Situational Analysis

Kenya's blue carbon ecosystems (BCEs)—mangroves and seagrasses—are nationally significant climate, biodiversity, and livelihood assets, storing over **75 MtCO₂e** and supporting **80% of coastal fisheries**. Despite strong policy progress, community comanagement models, and pioneering initiatives such as Mikoko Pamoja and Vanga Blue Forest, BCEs remain under pressure from **climate-driven stressors, ecological degradation, socio-economic vulnerability, governance gaps, and financial constraints**.

Climate impacts—including **rising sea surface temperatures**, reduced freshwater inflows, and more frequent extreme events—undermine BCE productivity and narrow restoration windows. Ecological pressures from over-exploitation, pollution, sedimentation, and unplanned development have resulted in the **degradation of 40% of mangrove forests** and widespread seagrass decline, compounded by weak restoration practices and persistent data gaps. Socio-economic drivers—low incomes, limited livelihood diversification, gendered vulnerabilities, and weak stewardship capacity—intensify dependence on BCE resources and reduce adaptive capacity.

Governance challenges include fragmented mandates, weak enforcement, inconsistent benefitsharing, and the

absence of a national seagrass restoration framework. Financial barriers—high restoration costs, high failure risk, short project cycles, and market uncertainty—limit scalability and investment readiness.

Despite these constraints, Kenya has strong opportunities: aligned national policy frameworks, active community organisations, expanding digital MRV systems, a youthful coastal population, and growing markets for carbon, biodiversity, and resilience finance. Advances in global seagrass science and emerging nature-based enterprises (eco-tourism, mariculture, seaweed farming) further strengthen the enabling environment.

Kenya's blue carbon ecosystems provide vital benefits, including climate mitigation, coastal resilience, biodiversity conservation, productive fisheries and sustainable livelihoods. They sequester between **4–12 tCO₂e/ha/year**, protect over **100,000 coastal residents**, reduce wave energy by **up to 66%**, and prevent **USD 46 million** in annual avoided losses. Community-led BCE initiatives generate **USD 30,000–60,000** annually and create **200–500 jobs per county**, reinforcing resilience and livelihood security.

2.1 Strategic Issues

The situational analysis reveals a set of systemic issues that must be addressed to unlock the full climate, ecological, and socio-economic value of Kenya's blue carbon ecosystems (Figure 2). These issues centre on strengthening assessment and restoration quality, deepening community stewardship,

improving data and governance coherence, and building a more predictable and scalable financing architecture. These issues define the priority areas for action in the Strategic Framework and guide the design of the Implementation and Investment Plan.

	Insufficient and inconsistent assessment, inappropriate restoration, and limited integration of climate-resilient management of BCEs	Current BCEs suffer from poor assessment, unchecked mangrove degradation, ecologically inappropriate restoration and exclusion from county frameworks, undermining climate resilience
	Weak community stewardship and climate-vulnerable coastal livelihoods	Coastal communities lack inclusive governance and sustainable enterprises tied to BCEs, limiting low-carbon transitions and value chain development

	Fragmented BCE data and monitoring systems	BCE MRV remains siloed from national systems, lacking digital platforms, policy integration, and high-integrity methodologies
	Inconsistent governance, policy and institutional Frameworks	Multi-level BCE governance is fragmented, with misaligned policies, limited community rights, and poor knowledge exchange
	Unsustainable finance and investment Architecture for BCEs	No national framework exists for screening investments, advancing markets, or ensuring equitable benefits in BCE financing

Figure 2.1: Strategic issues facing Kenya's BCEs

Chapter 3

Strategic Framework

Kenya's BCE-NDC Strategic Framework (2025–2035) provides an integrated pathway for restoring and protecting mangrove and seagrass ecosystems while strengthening community resilience, governance, use of science, and sustainable finance.



Vision

A climate-resilient coastal Kenya where blue carbon ecosystems thrive, supporting the well-being of people, nature, and the economy.

Anchored in a clear vision, mission, and guiding principles, the framework positions blue carbon ecosystems as core nature-based solutions for climate mitigation, adaptation, biodiversity protection, and coastal livelihoods.



Mission

To implement Kenya's NDC by integrating blue carbon ecosystems into national and county climate action through harnessing innovative finance and technologies, strengthening governance and empowering communities to achieve sustainable development.

3.1 Theory of Change

The Theory of Change is that when national and county governments, communities, and the private sector work together, the potential ecological and socio-economic value of blue carbon ecosystems can be fully realized (Figure 3).

By 2035, Kenya aims to restore, protect, and sustainably manage these ecosystems, supported by a robust national Monitoring, Reporting, and Verification (MRV) system to track progress and ensure accountability.

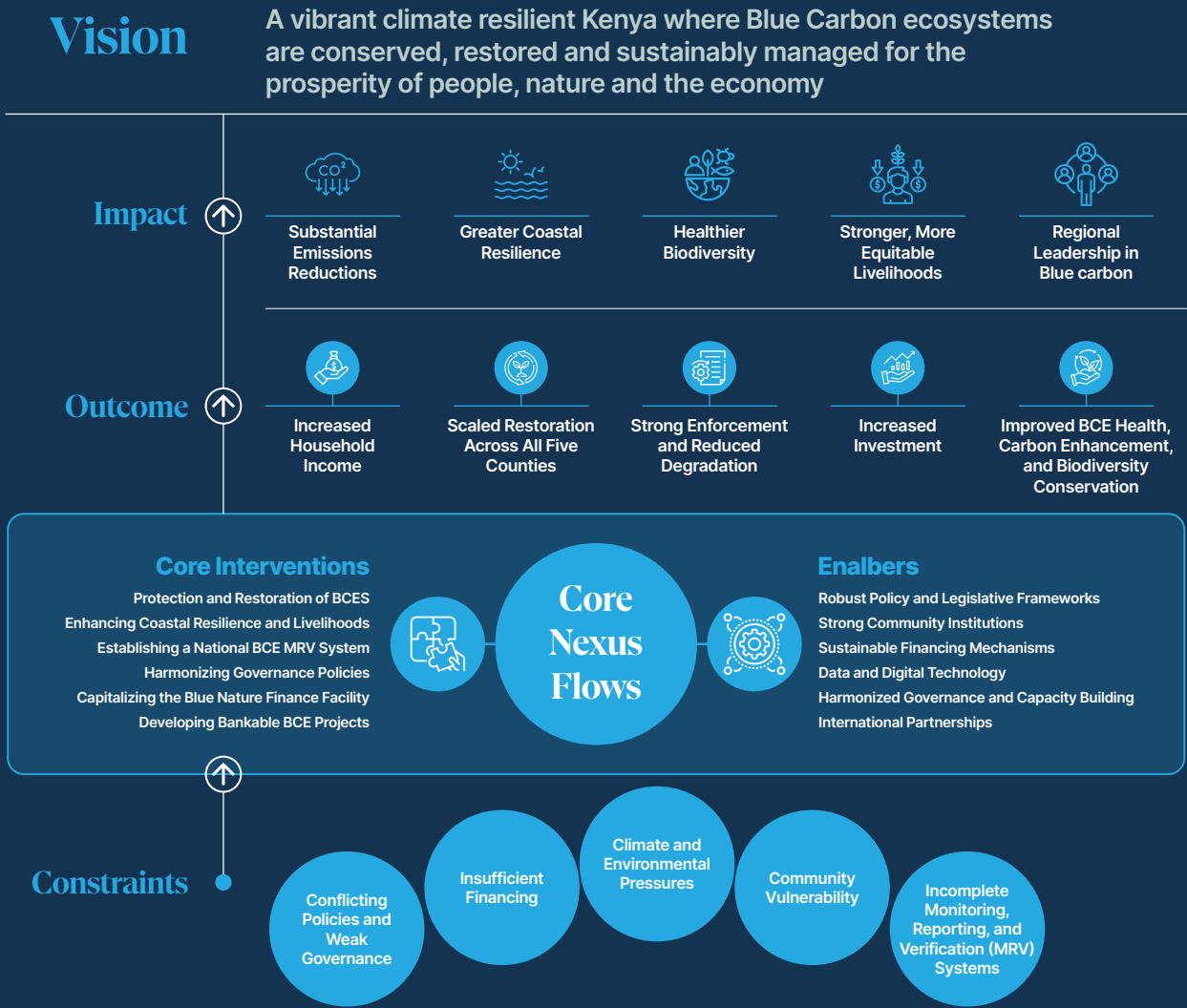


Figure 3.1: Theory of Change for the BCE-NDC Implementation and Investment Plan (2025-2035)

Delivery is structured around **five Key Result Areas (KRAs)**:

- **Climate-Resilient BCE Conservation and Restoration** – halting degradation, scaling up climate-smart restoration, and strengthening coastal protection.
- **Community Stewardship and Climate-Resilient Coastal Livelihoods** – expanding BCE-linked livelihoods, strengthening comanagement institutions, and enhancing inclusion.
- **BCE Science, Data, and Monitoring Systems** – establishing interoperable MRV systems, integrating indigenous knowledge, and deploying emerging technologies.
- **Integrated Governance, Policy Coherence, Institutional Strengthening, and Safeguards** – harmonising policies,

strengthening institutions, and embedding safeguards and rightsbased approaches.

- **Sustainable Finance and LongTerm Investment Framework** – mobilising USD 616 million by 2035 through blue finance taxonomies, blended finance, nature markets, Article 6 readiness, and community-centred climate-finance mechanisms.

The KRAs were developed through a multisectoral synthesis of national mandates, county responsibilities, and blueeconomy priorities, ensuring alignment with Kenya's NDCs, NCCAP III, and MTP IV. These KRAs provide a coherent, investable structure for scaling up BCE restoration, strengthening resilience, and unlocking climate and nature finance across Kenya's coastal landscape (Figure 4).

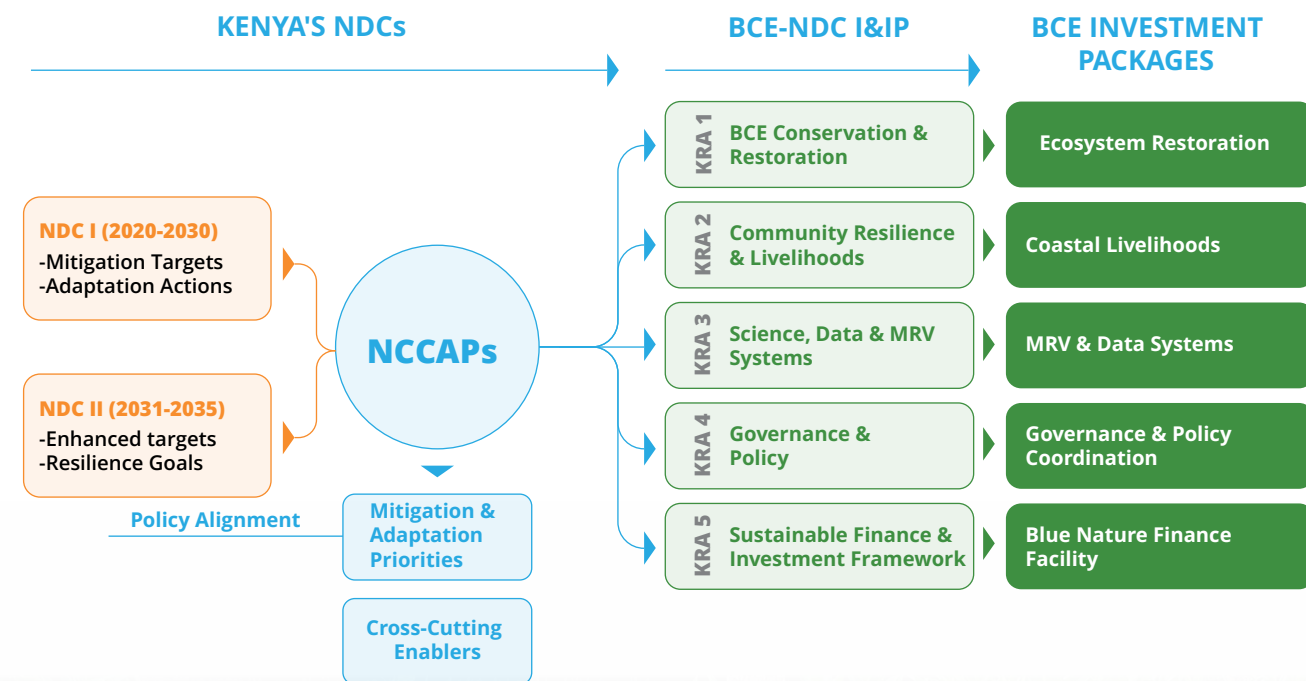


Figure 3.2: Kenya's Blue Carbon Investment Aligned with National Climate Policies and Development Goals

Chapter 4

Implementation and Coordination Framework

Kenya's BCE-NDC Plan is delivered through a **coherent multilevel implementation system** that translates national priorities into county action and communityanchored delivery. A structured **National-County-Community Delivery Model** defines complementary roles for policy setting, restoration, MRV, enforcement, capacity development, and benefitsharing, supported by decentralised County BCE Implementation Hubs. A strengthened **Collaborative Management Framework** embeds Free, Prior and Informed Consent (FPIC)-aligned safeguards, grievanceredress mechanisms, and communitybased monitoring to ensure legitimacy and accountability. A robust **Partnership and Collaboration Framework** mobilises government, private sector, academia, and development partners to drive cofinancing, innovation, and investment pipelines, ensuring

highintegrity, longterm delivery of Kenya's BCE-NDC commitments.

The **Implementation Roadmap** sequences delivery into three phases (Table 1):

- Foundation building** (governance, MRV, hubs, safeguards)
- Scaling up** (restoration, livelihoods, value chains, finance mobilisation)
- Longterm sustainability** (mature bluenature capital markets, full MRV integration, strengthened partnerships)

Progress is tracked through a comprehensive Monitoring, Evaluation, and Learning system.



Table 4.1: Implementation Roadmap

Phase	Timeframe	Core Priorities	Milestones	KRAs Driven
Phase I: Foundation & Systems Setup	2025–2028 — Build the enabling environment	1. Establish national–county–community coordination systems 2. Operationalise County BCE Implementation Hubs 3. Launch climatesmart restoration pilots 4. Build digital MRV, data, and reporting systems 5. Strengthen safeguards, Free, Prior & Informed Consent, and benefitsharing mechanisms	• 15% reduction in BCE degradation • 15,000 ha mangrove + 1,000 ha seagrass restored • 70% BCE MRV coverage • 50% of CFAs/BMUs active and trained • National BCE knowledge platform operational	1, 3, 4
Phase II: Scaling up & Investment Mobilisation	2029–2032 — Expand restoration, livelihoods, and finance	1. Scale up restoration and climateresilient management 2. Expand blue livelihoods and circulareconomy enterprises 3. Strengthen valuechain infrastructure and market systems 4. Mobilise blended finance, Article 6 cooperation, and nature markets 5. Expand research, innovation, and digital MRV integration	• 50% of priority BCE areas under climateresilient management • 5,000+ blue enterprises supported • 25 valuechain infrastructure investments operational • 50 innovation and research initiatives active • USD 250M BCE investment pipeline mobilised	1, 2, 3, 5
Phase III: Maturity & LongTerm Sustainability	2033–2035 — Consolidate systems and achieve national targets	1. Consolidate governance, safeguards, and institutional systems 2. Mature bluenature capital markets and investment facilities 3. Achieve full MRV integration into NDC/BTR reporting 4. Scale up communitycentred climate finance and risksharing systems 5. Strengthen regional leadership and partnerships	• 30% reduction in BCE degradation • 30,000 ha mangrove + 2,000 ha seagrass restored • 100% MRV interoperability • 120 partnerships strengthened • USD 616M cumulative BCE investment mobilised • Fully integrated BCE reporting architecture	1–5

Chapter 5

Investment and Financial Framework

5.1 Investment and Financial Framework

Kenya's BCE-NDC Implementation and Investment Plan outlines a strategic, fiscally grounded approach for mobilizing and managing resources to conserve mangroves and seagrasses while strengthening climate resilience, biodiversity, and coastal livelihoods. By fully integrating blue carbon ecosystem investments into national budgeting systems, specifically Programme Based Budgeting (PBB) and the MediumTerm Expenditure Framework (MTEF), the Plan converts each KRA into a formal government programme with costed sub programmes, implementation pathways, and measurable performance tracking. The framework defines total investment requirements across key sectors and activities and identifies a significant funding gap between current public spending and what is required to achieve the Plan's goals. Realizing the Plan's transformative objectives will necessitate a total investment of **USD 616 million between 2025 and 2035, USD 282 million by 2030 and USD 334 million by 2035**, representing just **1% of Kenya's total NDC financing needs**—to restore mangroves and seagrasses while strengthening climate resilience and coastal livelihoods (Table 5.1).

Financing is mobilised through a blended finance approach combining public budgets, development partners, climate funds, private investors, nature markets (including Article 6), and community finance, through blue finance facilities, guarantees, insurance, and project preparation systems. A four-tier financing architecture directs capital efficiently: **Tier 1** sovereign and international climate finance; **Tier 2** national financial intermediaries (DFIs, banks, insurers); **Tier 3** inclusive retail finance for SMEs, cooperatives, BMUs and CFAs; and **Tier 4** project level deployment generating carbon, biodiversity, and livelihood returns. Despite strong market potential—**USD 3–18M annual blue carbon revenue and 8–10% growth** in fisheries, aquaculture, seaweed, and ecotourism—financing gaps of **USD 245M (2030) and USD 271M (2035)** persist, requiring catalytic capital, guarantees, investment-readiness support, and carbon market infrastructure. Overall, the framework offers a **credible, investment-ready pathway** to accelerate restoration, expand blue livelihoods, and mobilise diversified finance for high integrity BCE-NDC delivery, biodiversity, and livelihood returns.

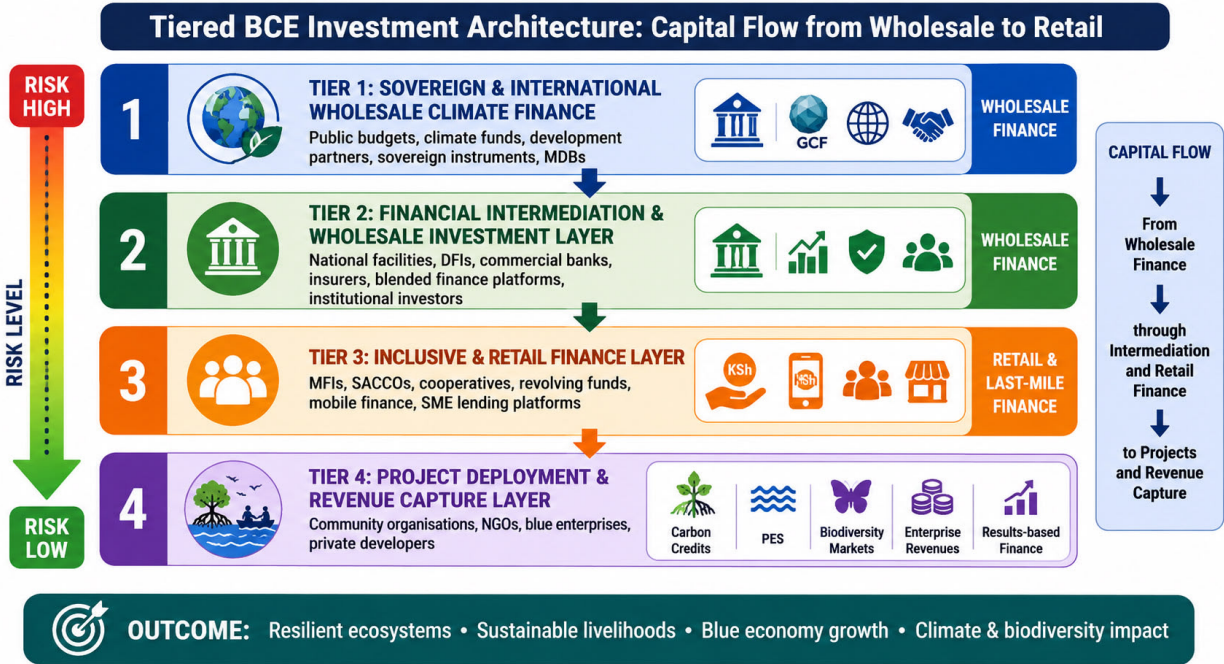


Figure 5.1: Financing architecture for BCE-NDC I&IP 2025–2035



Table 5.1: Priority Programs and Disaggregated Investment Needs

Key Result Area (KRA) / Priority Programmes	Investment Needs by 2030 (USD Million)	Investment Needs by 2035 (USD Million)	Total Investment Needs (USD Million)
KRA 1: Climate-Resilient BCE Conservation and Restoration	112.75	133.70	246.45
1.1 Halting degradation and decline of BCEs	24.58	29.15	53.72
1.2 Climate-smart BCE restoration	55.58	65.92	121.50
1.3 Climate-resilient BCE conservation and management	32.58	38.64	71.22
KRA 2: Community Stewardship and Climate-Resilient Coastal Livelihoods	84.56	100.28	184.84
2.1 Community capacity development and stewardship systems	13.86	16.95	30.81
2.2 Climate-resilient blue livelihoods and circular economy diversification	54.07	66.08	120.15
2.3 Blue value-chain infrastructure, market access, enterprise finance and risk management	56.84	69.46	126.30
KRA 3: BCE Science, Data and Monitoring Systems	29.57	44.36	73.93
3.1 BCE assessment, MRV and interoperable data systems	5.92	8.87	14.78
3.2 BCE science, indigenous knowledge, technology and innovation	11.83	17.74	29.57
3.3 BCE integration into NDC reporting and national frameworks	5.92	8.88	14.79
3.4 Blue Carbon information and knowledge management	5.91	8.88	14.78
KRA 4: Integrated Governance, Policy Coherence, Institutional Strengthening and Safeguards	30.81	30.81	61.62
4.1 BCE coordination and inclusive governance	9.25	9.24	18.48
4.2 Policy and regulatory frameworks	9.25	9.24	18.48
4.3 Capacity development and safeguards	7.70	7.71	15.41
4.4 BCE collaboration and partnerships	4.62	4.62	9.24
KRA 5: Sustainable Finance and Investment Framework	19.72	29.58	49.29
5.1 Blue finance policy and taxonomy systems	2.37	3.55	5.92
5.2 Sustainable blue financing mechanisms and facilities	5.92	8.87	14.78
5.3 Innovative blue finance products and nature markets	2.96	4.44	7.40
5.4 Blue investment facilitation programme	6.90	10.35	17.25
5.5 Community-centred climate finance, risk-sharing and fiscal incentives	1.57	2.37	3.94
TOTAL ESTIMATED INVESTMENT NEEDS	281.88	334.25	616.12

5.2 Investment Priority in the Coastal Counties

Kenya's coastal blue carbon ecosystem investment landscape forms a continuous ecological corridor stretching from the Taita Hills water towers to the Lamu archipelago, integrating hydrology, wetlands, mangroves, seagrass, coral reefs, and urban coastal systems. The BCE-NDC investment plan allocates resources according to ecosystem coverage, deltaic influence, urban pressure, and population-driven demand, creating a balanced, spatially coherent ridge-to-reef investment architecture (Table 5.2).

Table 5.2: BCE Investment Priorities segregated by County

County	Strategic BCE Role	Top Priority Investment Areas	Investment Needs (USD M)
Mombasa	Urban BCE pressure zone & industrial blue economy hub	- Urban mangrove & coral restoration - Deep-sea fisheries & cold-chain systems - Mariculture value chain - Smart City GIS Hub - BMU modernization & CCCF alignment	84.17
Kwale	Southern mangrove–seagrass–coral triad	- Vanga–Shimoni mangrove complex - Seagrass & coral rehabilitation - Seaweed & crab mariculture - Ecocamps & community tourism - ICZM & BCE gazettement	112.22
Kilifi	Estuarine, dune, coral & seagrass systems	- Sabaki Estuary rehabilitation - Offshore fisheries & Malindi cold-chain - Blue carbon ecotourism - GIS labs & early-warning systems - Catchment–coastal monitoring	123.45
Lamu	Kenya's largest BCE estate (mangroves, seagrass, coral)	- Large-scale mangrove & seagrass restoration - Shoreline buffers - Seaweed mariculture & ice plants - Marine research programme - ICZM & OSR digitization	168.34
Tana River	Deltaic hydrology & wetland carbon engine	- Delta hydrological restoration - Wetland reconnection - Cold-chain & apiculture - Flow & sediment monitoring - WRUA governance & CCCF	72.94
Taita Taveta	Hydrological engine feeding coastal BCEs	- Water tower & catchment restoration - Freshwater aquaculture - GIS hub & sediment monitoring - WRUA strengthening - Upstream–coastal linkages	55.00

Chapter 6

Monitoring, Evaluation And Learning (MEL)

A robust Monitoring, Evaluation and Learning (MEL) framework will be set up to provide a system for tracking progress, investment performance, safeguards, and climate outcomes across all BCE-NDC priority areas. It embeds **SMART KPIs** into monitorable elements—such as hectares restored, households benefiting from blue enterprises, digital MRV coverage, governance performance, and adoption of finance mechanisms—ensuring alignment with national climate monitoring systems and international reporting obligations under the **UNFCCC Enhanced Transparency Framework, Biennial Transparency Reports, and Article 6**.

The framework will integrate **digital MRV**, participatory communitybased monitoring, county-level aggregation, national technical validation, and independent verification. A multi-level reporting architecture links BMUs, CFAs, County BCE Implementation Hubs, National Technical Working Groups, and the Climate Change Directorate, supported

by a centralized MRV platform for real-time data capture, verification, and transparency.

Progress will be assessed against 2025 baselines, 2030 midterm targets, and 2035 endterm ambitions, including halting BCE degradation, expanding blueenterprise benefits to more than 80,000 households, achieving 100% digital MRV coverage, resolving 98% of grievances, and mobilising USD 620 million in blended finance.

The MEL framework will also track the **strategic investment areas**, assessing investment readiness, financial mobilisation, and maturity through dedicated outcome matrices and Treasury climate-tagging. This ensures BCE investments deliver **verifiable returns**, strengthen investor confidence, and remain aligned with Kenya's NDC commitments through 2035.



Chapter 7

Sustainability of BCE Initiatives

The longterm sustainability of the BCE-NDC Implementation and Investment Plan relies on embedding blue carbon priorities, financing mechanisms, and delivery systems within national and county governance structures to ensure climate, biodiversity, and livelihood outcomes endure beyond project cycles. Sustainability is secured through durable institutions, predictable and diversified financing—including public budgets, county climate funds, carbon markets, PES, blended finance, PPPs, and private investment—and transparent benefit-sharing that maintains community incentives and reinvests returns into ecosystem management. Ecological integrity is upheld through climate-resilient restoration, protection of critical habitats, biodiversity

conservation, and continuous ecosystem monitoring informed by sciencebased decisionmaking. Community stewardship remains central, supported by inclusive governance, safeguards, conflictresolution mechanisms, diversified BCE-linked livelihoods, and sustained capacity building.

Forward priorities include scaling up mangrove and seagrass restoration, fully operationalising MRV and registry systems, expanding community-based climate action, strengthening blueeconomy value chains, and mobilising large-scale blended finance to position Kenya as a regional leader in highintegrity blue carbon.



Partners



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IKI NA KAE



COUNTY GOVERNMENT
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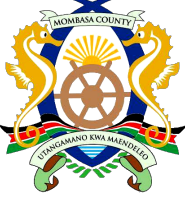
LAMU COUNTY



KWALE COUNTY
GOVERNMENT
UMOJA NI NGUVU



COUNTY GOVERNMENT OF KILIFI
KIMOTA KURUNGU



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