

KENYA

Policy Brief

LINKING THE VALUE OF MANGROVES TO CONSERVATION EFFORTS IN KENYA



KEY RESULTS

- Mangroves value was approximately KES 200,473.93/Ha as at 2019
- Carbon sequestration and wood extraction were the most valuable good and service provided by mangroves
- The participatory forest management has enhanced communities conservation efforts and made them appreciate the notion that forests are beneficial to their livelihoods
- Mangroves are vital for socioeconomic development and dependency depend on proximity to the forest
- Conservation can be enhanced through implementation of specific business case models

RECOMMENDATIONS

- Harmonize laws to avoid overlapping mandates amongst institutions
- Support effective community-led conservation and involvement in sustainable use schemes
- Execution of mangrove resource-remove and replace policy to encourage replanting post-harvesting
- Design compensatory schemes for conservation efforts as a motivation in the form of cash transfers, employment opportunity to communities
- Regular review and revision of regulations governing stakeholder relationship
- Review and control licensing of mangrove harvesters to avoid mangrove ecosystem degradation

Mangroves are critical ecosystems providing a variety of goods and services that benefit people and nature. They are however undervalued and mostly ignored in planning processes which accelerates decline in cover.

This policy brief informs decision makers on the need to incorporate material and intangible values to mangrove and presents key findings of a study on socio-economic role of mangroves and the governance framework in Kenya. The key to making informed decisions requires

understanding the elements that would motivate change in decisions and behavior, and how such can be included in a conscious process of cultural norm evolution. Presenting decision making institutions with evidence of these values and their beneficial role in their specific activities, alongside the development of feasible plans to incorporate them into existing structures and practices, will provide enabling conditions for mainstreaming and subsequent informed actions regarding the management and conservation of the increasingly threatened mangrove ecosystems.



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The policy recommendations made do not necessarily reflect the views of the institutions or their partners.

THE CONTEXT

Mangroves of Kenya

Mangrove forests in Kenya are found in five coastal counties: Lamu, Tana River, Kilifi, Mombasa, and Kwale covering approximately 61,271 ha over 18 forest formations. Administratively, 61% of the mangroves are situated in the county of Lamu, 14% in each of the counties of Kwale and Kilifi; 6% in Mombasa; and 5% in Tana River. There are nine species of mangrove trees and shrubs found along the Kenya coast. They are; *Rhizophora mucronata*, locally known as **mkoko**; *Bruguiera gymnorrhiza* locally known as **muia**, *Ceriops tagal*, locally known as **mkandaa**; *Sonneratia alba*, locally known as **mlilana**, *Avicennia marina*, locally known as **mchu**; *Lumnitzera racemosa*, locally known as **kikandaa**; *Xylocarpus granatum*, locally known as **mkomafi**; *Xylocarpus molucensis*, locally known as **mkomafi dume**; and *Heritiera littoralis*, locally known as **msindukazi**.

Mangroves' goods and services

The mangrove ecosystem provides direct and indirect socio-economic, ecological, environmental, cultural, scientific and educational value such as;

- Timber and wood fuel
- Tannins from the bark mangroves traditionally used to cure nets to extend their longevity
- Fodder for livestock
- Important fishing grounds
- Honey production, nectar of mangrove attracts honey bees, facilitating apiculture activities
- Source of traditional medicine
- Recreation and tourism (mangrove boardwalk and bird watching)
- Shoreline protection
- Carbon sequestration thus contributing to climate change mitigation
- Habitat and nursery to fish and other marine life
- Remove excess nutrients and pollutants from contaminated water sources
- Nutrient cycling
- Spiritual values-some are sacred sites

Placing a value on mangroves: What's the need?

It is only when people bear the true economic costs of using natural resources, such as mangroves, will they have appropriate incentives to use them efficiently and minimize their degradation and losses

Expected benefits of valuing of ecosystem services delivered by mangrove ecosystems include;

- For public or policy support; fosters awareness, provides additional evidence and justification for the importance of conserving and subsequent budgetary allocation, and links ecosystem services to national and international targets
- For site management; Valuation establishes a baseline for subsequent monitoring management effectiveness, reveals synergies and possible trade-offs between ecosystem services and conservation objectives to identify management options, and enhances development of management strategies that integrates the ecosystem services
- For human well-being; ensures a good understanding of the ecosystem service values that are important to resident, local and more distant stakeholders
- For planning; Valuing of ecosystem services supports spatial and strategic conservation planning and investment by identifying areas of particular importance for ecosystem services, and helps in assessing consequences of land-use change
- For private sector development; provides incentives for businesses to engage in the conservation of sites by demonstrating the dependence of the businesses on ecosystem services provided by sites (e.g. public-private funding schemes, in-kind support, branding)
- For funding and investment; attracts Government and donor investment from other sectors concerned with conservation of ecosystem services, and supports the development of new sustainable finance mechanisms for conservation of the sites, such as Payments for Ecosystem Services (PES) or carbon financing



Mangrove stressors and drivers of mangrove loss in Kenya

Main causes of mangrove degradation in Kenya include; Overexploitation of wood resources for building poles, fencing, fuel wood, fishing stakes, and charcoal burning; Conversion of mangrove forest areas to other uses including salt mining or even settlement; Siltation caused by soil erosion and natural hazards and Coastal development. The underlying driving forces that

underpin the proximate causes have been identified as population pressure, poverty and inequality, low levels of education, economic development, and poor governance. Losses of mangroves are disproportionately higher in urban centers than in rural areas as illustrated in the table below;

County mangrove degraded proportions

County	Mangrove area (ha)	Degraded mangrove (ha)	%Degraded area
Mombasa (Urban)	3,771	1,850	49.1
Kwale	8,354	3,725	44.6
Kilifi	8,536	3,422	40.0
Lamu	37,350	14,407	38.6
Tana River	3,260	1,180	36.2
Total (ha)	61,271	24,585	40.1

Source: GoK, 2017

MAIN FINDINGS

I. Natural capital from mangroves along the Kenyan coast

Socio-economic benefits of mangrove are based on the size of the forest and the densities within the formations.

- Overall, the study established that, for the 11-mangrove formations that were investigated, the accrued unit value for the year 2019 was at KES 200,473.93/Ha.
- **Carbon sequestration** was valued highly at **KES 93,887.97/ha/year**, followed by **wood extraction at KES 58,606.59/ha/year**, **shoreline protection at KES 22,909.29/year**, **community-based ecotourism at KES 18,382.93/ha/year**, **fish catch at KES**

5,964.39/ha/year and **habitat provision at KES 2828.56/ha/year**. Medicinal use, non-use (existence value) and biodiversity conservation were valued at **677.42/ha/year**, **361.02/ha/year** and **267.03/ha/year** respectively.

Natural capital value of mangrove ecosystems has been changing over the years which is attributed to human related activities such overexploitation of available resources, increased population pressure, climate change among other factors.

II. Conservation frameworks governing management of forest formations

The participatory forest management and utilization process has enlightened local communities and made them appreciate the notion that forests are beneficial to their livelihoods, hence they should manage them as their resource

Institutional and governance challenges

- The institutional terrain for management of mangrove ecosystems is dominated by multiple actors and institutions with overlapping roles and mandates, especially between the KFS and KWS. This has been a major impediment towards efficient management and conservation of the mangrove ecosystems.
- Communities do not understand the policy, regulatory and

institutional framework for management of mangroves ecosystems, hence impeding the success of compliance and enforcement of laws

- The roles of the National and County Governments in the management and conservation of mangrove ecosystems are not clear.
- The support given to Beach Management Units and other conservation groups is not enough, and associated limited resource allocation for conservation has a minimal constructive outcome.
- Rampant corruption and development activities such as urban expansion or tourism activities in protected areas have a long-term impact on sustainability.





III. Human development related to the change in mangrove forest densities and area

- Communities living closer to the mangrove ecosystem were found to be highly dependent on the mangrove ecosystems compared to those that were far off confirmed. The level of dependency of 69.2% was recorded for people living within the 10Km radius.
- Communities whose culture is connected to mangrove use are highly dependent on the mangrove ecosystem.
- The communities believe that, the mangrove ecosystems are responsible for the flourishing of fish, firewood, traditional medicine, ecotourism, cultural activities and honey production, as well as a source of employment especially for the youth and women.
- The role of local communities in conservation is strengthened with the increase in the social-economic benefits realized from the mangrove ecosystem. When communities remain unaware and not concerned, then the efforts of sustainable utilization and increased socio-economic benefits to the communities cannot be realized.

IV. Business case development for mangroves along the Kenyan Coast

There is need to integrate environmental, economic, and social concerns in mangrove development processes for effective conservation. This could be done through the following entry points where mangroves can provide value to potential investors in Kenya while ensuring that mangrove conservation and restoration;

- Match the coastal protection value of mangroves with conservation efforts
- Upscale and out scale Payment of Ecosystem Services schemes including carbon trading
- Recognize and support sustainable use schemes by communities adjacent to mangroves
- Provide matching funding to promote conservation as a way of meeting regulatory environmental standards by investors and government.

Recommendations for Policy Makers

- Harmonization of laws between overlapping mandates of institutions is very critical if proper and effective management of the mangrove ecosystems is to be achieved.
- Support effective community-level conservation and involvement in income generating activities like the implementation of sustainable use schemes, the payment for ecosystem services and the introduction of alternative activities which critical for mangrove ecosystem conservation
- Regular review of Participatory Forest Management Plans
- Execution of mangrove resource-remove and replace policy to encourage replanting post-harvesting.
- There is a need for compensatory measures as a motivation in the form of cash transfers, employment opportunity to communities
- The existing regulations governing the relationship between stakeholders, the community, and their access rights require regular review and revision.
- Need for fair benefit sharing and the introduction of compensatory programmes for conservation efforts
- Review and control licensing of mangrove harvesters to avoid mangrove ecosystem degradation
- Regulation of activities affecting mangrove areas and their connected ecosystems should be supported by integration of mangrove considerations in planning and permitting processes, as well as fair and effective systems for decision-making, dispute resolution and recognition of tenure and rights.

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