NATURE-BASED LIVELIHOOD IMPROVEMENT FOR COMMUNITIES ADJACENT TO MANGROVE FORESTS

In contrast to the commercial utilisation of mangroves through wood harvesting, nature-based enterprises offer alternative income streams for communities that promotes conservation and protection of mangroves.

Bee keeping for unique honey
A number of apiaries have been established within or near mangrove forests by the local community groups. The honey from mangrove forest has a unique distinctive taste with a high demand from customers. The honey has a lower glycaemic index and high medicinal value.

Aquaculture
Aquaculture takes place within mangrove areas. Crab farming has been taking place where community groups raise crabs in wooden cages placed among the mangroves for sale generating income for the community.

Blue carbon credits
Mangroves store three to five times more carbon than terrestrial forests making them elemental in the fight against carbon emissions and global warming. Gazi and Makangeni villages have a carbon offset project, the first of its kind in the world to successfully trade mangrove carbon credits. The project is an initiative of Mikoko Pamoja community group with support of the Kenya Marine and Fisheries Research Institute, with the income used to support mangrove conservation alongside livelihood programs within the villages.

Fishing
More than 85% of fishing activities along the coast are carried out by artisanal fishermen in shallow inshore areas within and adjacent the mangroves directly employing more than 20,000 fishers. It is estimated that 70% of commercial fishery species depend in one way or another on the mangroves as breeding and feeding habitats. Other fauna supported by the mangrove environment include molluscs, crustaceans, reptiles, mammals and birds.

Ecotourism
A number of ecotourism facilities have been established within the mangrove forest areas by local the communities. The facilities give visitors easy access to a mangrove habitat that would be otherwise difficult to see, providing education on mangroves’ ecology and conservation using interpretation and on-site guides. The facilities include boardwalks, bird hides, and mangroves restaurants among others.

Sea weed farming.
Seaweed farming is an enterprise taking place in South Coast. The experience obtained indicate that it is a potential income generation activity that would supplement fishing while reducing pressure from mangroves arising from illegal harvesting and other destructive activities in the quest for livelihood generation.

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Mangroves occur along the entire coastline in tidal estuaries, creeks, and protected bays. The total mangrove area in Kenya is 61,271ha with Lamu County having the highest coverage of 37,350ha, followed by Kilifi 8,536ha, Kwale 8,354ha Mombasa 3,771ha and Tana River 3,260 ha. Their management is guided by the National Mangrove Ecosystem Management Plan 2017-2027, and respective forest management plans.

Role of mangrove forests in the Blue Economy
Blue economy refers to human use of the ocean especially in the context of economic benefit. It embraces economic, social and environmental benefits, which are the triple pillars reflecting the Sustainable Development Goals (SDGs) as captured in SDG14, ‘Conserve and sustainably use the oceans, seas and marine resources for sustainable development,’ and the seven targets that underpin it. Mangroves sit in the nexus between the green and blue economies as they occupy the fringes of the ocean. As such they contribute immensely to livelihoods and well-being of the coastal communities especially in providing ecosystem services that underpin fisheries, coastline/shore protection and blue carbon among others. The contribution of mangroves to National Determined Contribution can be very significant if well conserved and protected.

Legal Status of Mangroves in Kenya
Mangroves were declared government reserve forests in 1932. Under this “Gazette Notification for Mangrove Forests in Kenya” all land between high water and low water marks (ordinary spring tides) are described as mangrove areas. Article 62(1)(f) of the Constitution of Kenya declares, “All land between the high and the low water marks” which corresponds to the area occupied by the mangroves, as public land. The responsibility to manage mangroves is bestowed on the Kenya Forest Service (KFS) either singly or in partnership with the Kenya Wildlife Service (KWS) when they occur in Marine Parks and Reserves.

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Background on Mangroves

Introduction
Mangroves are salt tolerant trees and shrubs that grow in the intertidal regions of the tropical and subtropical coastlines, thriving in areas where freshwater mixes with seawater. Mangrove trees have various adaptations that enable them to cope with the harsh environments that they inhabit including having above-ground breathing roots (pneumatophores), roots that penetrate the ground at a distance away from the stem (stilt roots) and seeds that turn into seedlings while still attached to the parent tree.

Mangrove forests provide essential ecosystem services including carbon sequestration, habitat for biodiversity, shoreline protection and are key to climate change mitigation. They also provide a livelihood for the coastal people, especially in Lamu whose culture and livelihoods are closely associated with mangroves. There are nine mangrove species in Kenya with Rhizophora mucronata (Mkoko) and Ceriops tagal (Mkandaa) being the most dominant species. The rare species are Heritiera littoralis and Xylocarpus moluccensis.

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INTERNATIONAL DAY FOR THE CONSERVATION OF MANGROVE ECOSYSTEM

MOMBASA COUNTY; DATE 26TH JULY, 2021

STATUS OF MANGROVE RESOURCES IN KENYA

Tana River County mangrove forests cover 3,260 ha stretching from Ngomeni to Kipini with around 87% of the forest composed of pure stands of Avicennia; followed by stands of Bruguiera mixed with Heritiera and Xylocarpus. Tana River basin is unique in its mangrove resources especially in the area around Kipini since it has the only large stand of Heritiera in Kenya. In addition, the Tana River Delta was designated a Ramsar site in 2012 because of the uniqueness of the delta in terms of biodiversity and support to humankind.

In Kilifi County, mangroves occur in small patches stretching from Mtwapa creek to Ngomeni. Major mangrove areas in the county include, Mtwapa, Kilifi-Takaungu, Mida and Ngomeni. They cover 8,535 ha. The major forest types are pure stands of Avicennia followed by mixed Rhizophora stands. Ngomeni holds the largest proportion of mangroves in Kilifi but is under severe threat from solar salt farm developments and aquaculture. A portion of the mangrove area (Kilifi-Takaungu and Mida Creek) occur within the Malindi-Watamu-Arabuko Sokoke Biosphere Reserve that is an international designation under UNESCO Man and Biosphere Programme.

Mombasa County has 3,771 ha, distributed mostly along Port Reitz and Tudor Creeks. This peri-urban forest is dominated by Ceriops – Rhizophora and mixed stands of Rhizophora. The forest is heavily degraded through illegal harvesting, land encroachment and reclamation, waste dumping, pollution (oil spills) and terrigenous input. Nearly 3,850 ha of mangroves in Mombasa County are degraded and in urgent need of rehabilitation with over 80% loss reported in Tudor Creek. The loss is attributed to illegal felling of trees to meet the demand for poles and fuelwood.

“The mangroves of Lamu County cover approximately 37,350 ha, equivalent to 61% of the entire mangrove area in Kenya.”

“The mangroves of Mombasa are under heavy environmental stress occasioned by urbanisation and other infrastructural development activities.”

The mangroves of Mombasa are under heavy environmental stress occasioned by urbanisation and other infrastructural development activities. They require to be regenerated to enhance provision of ecosystem services and to save them from further degradation.

The mangroves of Kwale County comprise Vanga-Funzi, Gazi Bay, and Ukunda areas covering an area of approximately 8,354 ha. These forest patches are dominated by mixed stands of Ceriops and Rhizophora; as well as pure stands of Avicennia. The main threats of mangroves in Kwale are illegal harvesting and rice farming.

The concern on the loss and degradation of mangrove ecosystems worldwide compelled the General Conference of the United Nations Educational Scientific and Cultural Organisation (UNESCO) in 2015, to adopt the proclamation of the International Day for the Conservation of the Mangrove Ecosystem celebrated each year on 26th July. The aim is to raise awareness of the importance of mangrove ecosystems as a unique, special and vulnerable ecosystem and to promote solutions for their sustainable management, conservation and utilisation. In Kenya, this was marked for the first time in 2019 in Kwale County and the second time in Lamu in 2020. A total of over 16.7m mangrove seedlings have been planted since it was first marked in addition to preparation of participatory forest management plans to guide management activities and formation of community forest associations to implement them.

Theme

The THEME this year is “Mangrove Ecosystem Restoration for Climate Resilience and Sustainable Livelihoods: A Unique, Special and Vulnerable Ecosystem” in tandem with the United Nations General Assembly’s declaration of the UN Decade for Ecosystem Restoration 2021-2030 and UNESCO’s recognition as a “Unique, Special and Vulnerable Ecosystem”.

Rationale for Sites and Activities

Healthy mangrove forests are key to a healthy marine ecology for optimum provision of ecosystem services. Mombasa County has the lowest mangrove cover of 3,771 ha (6%) and the most degraded and threatened by human activities. The mangrove in Tudor creek are the most threatened with the highest level of loss and degradation. In view of this situation, Jomvu in Mombasa County has been selected as the site for marking this important day in order to raise awareness and rally support for mangrove conservation efforts.

OUR STRATEGIC PARTNERS

In marking the day, KFS has mobilized state and non-state strategic partners key among them: County Governments, Kenya Marine and Fisheries Research Institute, Kenya Forestry Research Institute, Kenya Wildlife Service, Base Titanium, Eden Reforestation Project, Nature Kenya, WWF and Forest adjacent communities among others.

Chief Conservator of Forests, Mr Julius Kamau inspiring the young generation on conservation through mangrove tree growing at Gazi bay, Kwale County.