

# Restoration of Sacred *Kaya* forests in Kenyan Coast for enhanced provision of ecosystem services and products for improved livelihoods

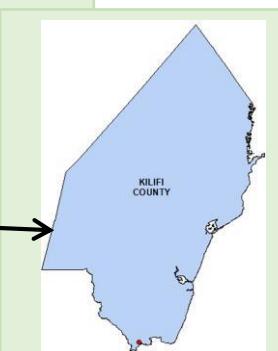
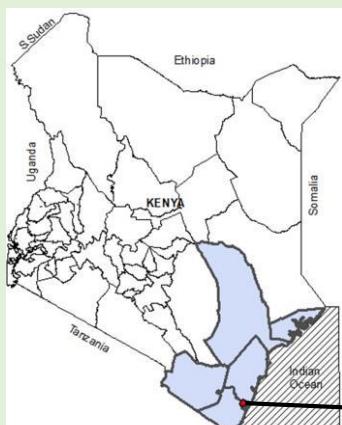
**Chemuku Wekesa**

Kenya Forestry Research Institute, Taita Taveta Research Centre, P.O. Box 1206-80304, Wundanyi

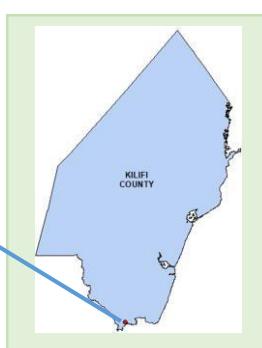
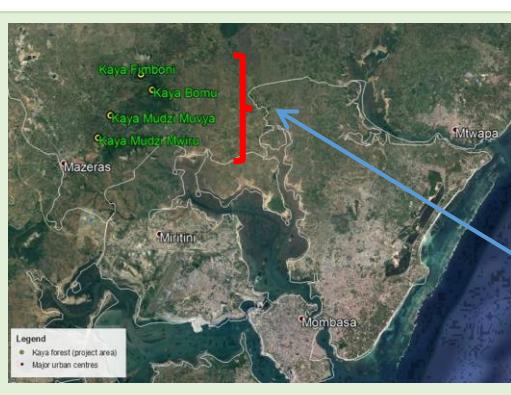
Contact address: [chemukukefri@gmail.com](mailto:chemukukefri@gmail.com)



## Geographic and demographic information



Country	Kenya
Province	Coast
District/County	Kilifi
Size of geographical area	12,246 Km <sup>2</sup>
Number of indirect beneficiaries	128,459 persons (Men: 83,499 persons) (Women: 44,960 persons)
Dominant ethnicity	Mijikenda



Size of project area	5.8 Km <sup>2</sup>
Number of direct beneficiaries	10,000 persons (Men: 6,500 persons) (Women: 3,500 persons)
Geographic coordinates (longitude and latitude)	S 03° 55' 55" and E 39° 35' 46"
Dominant ethnicity	Mijikenda

## Ecosystem Types

<input checked="" type="checkbox"/>	Forest	<input checked="" type="checkbox"/>	Grassland	<input checked="" type="checkbox"/>	Agricultural	<input checked="" type="checkbox"/>	In-land water
<input checked="" type="checkbox"/>	Coastal	<input checked="" type="checkbox"/>	Dryland	<input checked="" type="checkbox"/>	Mountain	<input checked="" type="checkbox"/>	Urban/peri-urban

## Important species in the site

English common name <i>(Local name)</i>	Scientific name	Description
Mvada-paka	<i>Harrisonia abyssinica</i>	A spiny shrub or tree 2-6m with red, globose or lobed fruits. Highly valued medicinal plants.
Mkwaju	<i>Tamarindus indica</i>	It is well known for its juice, souring porridge and seasoning and for its durable timber and high quality firewood.
Muzambaraho	<i>Syzygium cumini</i>	Its purplish sweet fruits are very popular and are sold in markets when in season. The tree is also used for timber, furniture, construction poles and firewood.
Muyu	<i>Adansonia digitata</i>	It has large fruits with many seeds embedded in white-pink, dry, edible pulps are very popular. Lumps of dry pulp with the seeds embedded within are dyed with bright colors and sold as sweets in the local market. A refreshing drink is made from the fruit pulp. Seeds are fried and eaten.
M'chakaya	<i>Ziziphus mucronata</i>	The tree has many uses including; firewood, fodder, edible fruits, live fence, ornamental, bee forage and of high medicinal value.



*Harrisonia abyssinica*

## General introduction

### Characteristics and importance of *Kaya* forests

Located along the coastal region of Kenya, the *Kaya* forests are peculiar examples of a multifunctional landscape referred to as socio-ecological production landscapes and seascapes (SEPLS). *Kaya* forests provide both direct and indirect benefits for human well-being. The forests occur as small isolated forest patches ranging from 2.0 to 200.0 hectares in size. *Kaya* means homestead in the Mijikenda language. Historically, these forest patches sheltered small fortified villages (*Kayas*) which were set up by the Mijikenda people when they first appeared in the region many centuries ago after fleeing their enemies in the north. As security improved in the last century, the Mijikenda groups moved out and settled in the surrounding areas, but the *Kaya* forests were preserved as sacred places where prayers, rituals, sacrifices and burials took place. Protection of the *Kayas* remains deeply entrenched in traditional Mijikenda culture and their integrity and sanctity are safeguarded by a council of *Kaya* elders who employ a system of taboos and traditional rules to protect these forests.

Local communities living around *Kaya* forests are small scale farmers mainly involved in intensive agriculture to sustain their livelihoods. Despite land being intensively cultivated by locals, *Kaya* forests represent areas of relatively untouched vegetation rich in biodiversity. The *Kaya* forests form part of the once extensive Zanzibar-Inhambane lowland mosaic, known for high species diversity and endemism; as such they are a very important part of Kenya's threatened natural vegetation communities given the role they play in facilitating how local communities adapt and cope with climate change. *Kaya* forests exhibit a very high level of biodiversity both in terms of sheer diversity, endemism and rarity in a significant number of biological groups.

The diverse flora and fauna of the *Kaya* forests and the associated processes support local communities in sectors such as biomass energy, food, shelter, herbal medicine, eco-tourism industry and agriculture productivity. *Kaya* forests are also important sources of non-provisioning ecosystem services such as air and water purification, pollination, seed dispersal, climate modification, soil stabilization, drought and flood control, recycling of nutrients and maintaining healthy habitats. Others include spiritual and aesthetic values, supporting indigenous knowledge systems and education.

## **Challenges facing *Kaya* forests**

- Disregard for traditional knowledge systems
- Over-exploitation
- Population pressure
- Unsustainable land use practices

## **Objectives of your project**

To restore degraded sites in *Kaya* forests for enhanced biodiversity conservation and improved local livelihoods.

## **Activities employed**

- 1) Building the capacity of local communities to effectively undertake forest rehabilitation and restoration
- 2) Establishment of community tree nurseries to provide planting materials for participatory rehabilitation
- 3) Maintaining the community seed bank for preservation of important but threatened medicinal and wild food plants
- 4) Development of community based monitoring tracking tool to track the tree nurseries, tree survival and landscape restoration
- 5) Documentation of indigenous knowledge of wild and food plant species in and around the *Kaya* forests



Aerial view of *Kaya* forest



Basketry products made from *Kaya* forests

## Contribution to Aichi Biodiversity Targets' Strategic Goal D

	<b>Breakdown Target</b>	<b>How did you measure the outcome?</b>	<b>Result</b>
Strategic Goal D	TARGET 14  Ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded ...  ... taking into account the needs of women, indigenous and local communities, and the poor and vulnerable	Survival rate (%) of seedlings of native tree species planted in the degraded sites	Survival of the restored 3.0 hectares established using the tracking tool. The survival rate stands at 89%
	Ecosystem resilience and the contribution of biodiversity to carbon stocks have been enhanced through conservation and restoration	Number of biocultural innovations and practices of indigenous communities applied in sustainable conservation and use of biodiversity	Sixteen (16) biocultural innovations identified and documented; and disseminated widely for up scaling
TARGET 15	At least 15 per cent of degraded ecosystems are restored, contributing to climate change mitigation and adaptation, and to combating desertification	Number of studies undertaken to generate information on carbon stocks and biodiversity status of the <i>Kaya</i> forests and associated landscape in order to develop restoration technologies for conserving biodiversity	Three studies have been undertaken on <i>Kaya</i> forests and the following publications generated: policy brief, Guide on the floral diversity of <i>Kaya Mudzi Muvya</i> and Technical report on the biocultural innovations of Mijikenda Community. Publications have been shared widely for application of the knowledge to conserve biodiversity
TARGET 16	The Nagoya Protocol is in force  The Nagoya Protocol is operational, consistent with national legislation	Area (ha) of degradation hotspots mapped and replanted with native tree species raised in the community nurseries	Five (5.0) hectares of degraded sites within <i>Kaya</i> forests mapped and identified for replanting to restore them. Already, 3.0 hectares of the degraded sites restored with native/indigenous tree species
		Number of community members participating in seed exchanges and sharing; number of community seed banks established to preserve and promote seed sharing and exchange among community members	1,150 community members have registered as members of the established community seed bank to easily access seeds for traditional crop varieties for planting

### Relations to other Aichi Biodiversity Target & SDGs

Please indicate the Aichi Biodiversity Targets other than the targets your working group focuses and SDGs that your activities contribute to if any. Use “●” and “■” to indicate the “direct” or “indirect” contributions to the targets.

CBD Aichi Biodiversity Targets (<https://www.cbd.int/sp/targets/>)

Strategic Goal A				Strategic Goal B					
■	●	■	■	●		●		■	
Strategic Goal C				Strategic Goal D			Strategic Goal E		
●	●	●	●	●	●	●	■	●	●

UN Sustainable Development Goals (SDGs) (<https://sustainabledevelopment.un.org/sdgs>)

●	●	■		●	●		●	
<b>1 NO POVERTY</b> 	<b>2 ZERO HUNGER</b> 	<b>3 GOOD HEALTH AND WELL-BEING</b> 	<b>4 QUALITY EDUCATION</b> 	<b>5 GENDER EQUALITY</b> 	<b>6 CLEAN WATER AND SANITATION</b> 	<b>7 AFFORDABLE AND CLEAN ENERGY</b> 	<b>8 DECENT WORK AND ECONOMIC GROWTH</b> 	<b>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</b> 
<b>10 REDUCED INEQUALITIES</b> 	<b>11 SUSTAINABLE CITIES AND COMMUNITIES</b> 	<b>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</b> 	<b>13 CLIMATE ACTION</b> 	<b>14 LIFE BELOW WATER</b> 	<b>15 LIFE ON LAND</b> 	<b>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</b> 	<b>17 PARTNERSHIPS FOR THE GOALS</b> 	

### Any difficulties you found during your assessment

The baseline study was not conducted prior to the start of the project, hence difficult to measure clear outcome

### Key messages for the CBD in planning for the post-2020 Targets

The work of IPSI should continue beyond post 2020 targets and the capacity of members consolidated to scale out the conservation and revitalization of SEPLS globally.