



# Lamu Environment Foundation Scoping Report





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# Introduction



Lamu archipelago is located in the northeast coastal region of Kenya and is part of the greater Lamu County. The archipelago is made up of over 60 islands consisting of 130km of coastline with Kiunga marine reserve situated at the northernmost tip - dolphins, dugongs and whales have often been sighted here and throughout the archipelago.

Due to its location on the coast, the traditional mainstay of the archipelago is fishing. In the past the archipelago was an important hub for international trade including the Eastern trade routes from China, India and the Arab states.

Due to this rich history, the archipelago hosts some of Kenya's - if not East Africa's - oldest ruins including the town of Takwa on Manda Island and Sioux Fort on Pate Island. UNESCO has even recognised Lamu Town on Lamu Island as a World Heritage Site, labelling it as the most well preserved Swahili settlement along the East African coast.

As well as the draw of culture and heritage of the archipelago Lamu and Manda islands have long been known as tourist hotspots owing to their miles long untouched beaches lined by palms, sand dunes and on Manda, Baobab trees.



The Indian Ocean has long proved bountiful to these island communities. The extensive coral reefs, seagrass beds, sand bars and mangrove swamps provide excellent places for sea life to breed and thrive. Due to this, throughout the ages communities have depended on the ocean for food and income.

However, this is beginning to change as the traditional ways of life and the surrounding environments are threatened by urbanisation, population growth, mismanagement of resources, climate change and pollution.

Yet, the archipelago and its people are unique in their intrinsic connection to their environment and their desire to act to protect their rapidly deteriorating environment. This is shown by the actions of local grassroots organisations who are working to make positive, sustainable changes to their environment. Due to the desire to make positive changes and the local groups, the archipelago is perfectly placed to receive conservation funding to ensure change occurs at a local level.

There have been efforts made by the community over the years to ensure the conservation of its bountiful natural resources such as;

- Locally managed marine protected areas (MPAs)
- Locally managed marine areas (LMMAs)
- Community managed waste collections and cleanups
- Community-led mangrove replanting and management
- Measures to curb the use of illegal and unsustainable fishing gear

However, many of these initiatives have not been able to sustain themselves or grow due to being run by volunteers and a lack of funding. Though there is now a generation of young people dedicated to protecting their environment not only for their future but for future generations. They aim to do this by providing sustainable incomes from new and innovative industries and engaging with previously marginalised members of those communities.

Currently, Lamu County is under the governance of its Governor Fahim Twaha. However, due to Fahim's main support base living elsewhere in the archipelago, the archipelago has largely been neglected during his two terms in power. This has led to funds for conservation being directed elsewhere and further mismanagement within local ministries whose work should be focussed on the protection of the environment.

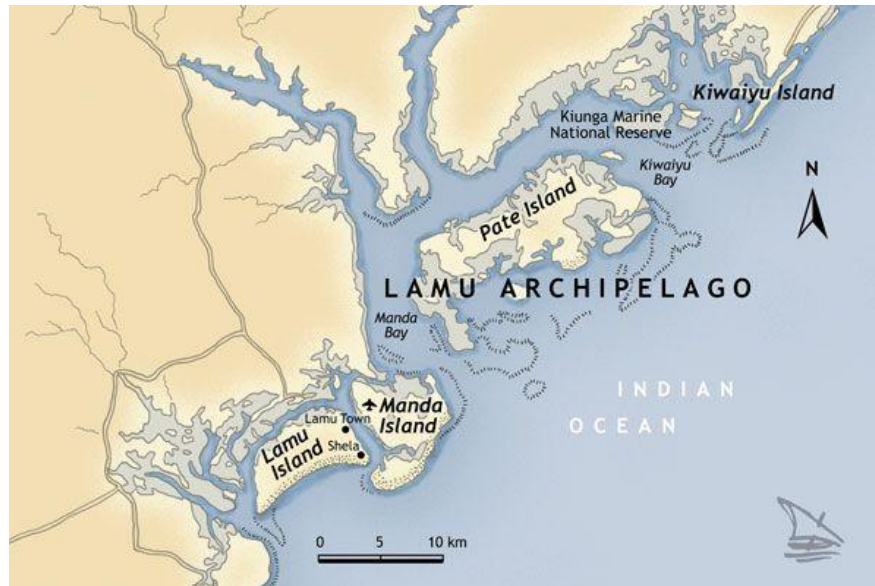
This report highlights the different ecosystems in the Lamu archipelago, the issues that each of those ecosystems faces and showcases the people and groups doing something to tackle these issues.







## Area Profile



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The archipelago has a population of approximately 52,000 across 130km of coastline and encompasses over 60 islands separated by numerous mangrove-covered marine channels and estuaries separated from the ocean by coral reef systems.

The area experiences a hot and dry climate with an average annual temperature of 25°C and an average rainfall of 900mm. Heat stress and drought are continual threats to the environment here that can in turn severely affect communities and livelihoods. Climate projections also suggest that rainfall will continue to decrease thus putting more pressure on the management of existing water reserves and rainwater harvesting.

The population includes both indigenous and migrant people whose culture has been influenced by the Portuguese and Arab settlers. These are Swahili, Arabs, Wardea, Orma, Wasanye, Pokomo, Giriama, Somalis, Awer (Bonis) and Bajuni.

Due to its unique marine and terrestrial habitats, Lamu County has been recognised as an important hotspot for global biodiversity. At the northernmost tip of the archipelago lies the Kiunga-Kiwaiyu Marine National Reserve (60,000 ha). This was designated as a protected area in 1979 and a biosphere reserve in 1980.



Lamu county and the archipelago specifically houses 68% of Kenya's mangrove forests. These are of specific importance as they sequester huge stocks of carbon above and below ground. But if these forests are degraded a huge amount of carbon will be released into the atmosphere. Currently, it's estimated Kenya's mangroves carbon stocks range from 600 – 1,500tC/ha. ([WWF, 2018](#)).

Kiunga has also been recognised as an important bird area and houses many endemic species.

As for marine species and habitats, the Lamu archipelago is host to some of Kenya's largest seagrass beds that are breeding grounds for the endangered species, Dugong. These secretive mammals were once so commonplace they were sighted daily. However, it is now thought there is only a handful left in the archipelago. While the patchwork of coral reefs along the coastline supports over 180 different species of coral.

There are many other endemic species including dolphins; Bottlenose, Humpback, Risso, and Spinner, sharks; Qatar, Black and White Tip, many turtles; Green, Hawksbill, Olive Ridley and Loggerhead. As well as countless other species due to the rich diversity of the local coral reefs.

The archipelago is also a well-known migration pathway for Humpback Whales, Whale Sharks, Manta Rays, Pilot Whales, Brides Whales.

The marine area also supports fisheries that have long been utilised as an income source for communities. The shallow waters provide diverse habitats for many species of fish and invertebrates.

## Current Protected Areas

There are varying levels of protected areas across the archipelago, ranging from community-led and managed to legally gazetted.

- Kiunga-Kiwayu marine reserve covers 270 sq. KM at the northernmost tip of the archipelago. This has been a protected area since 1979 due to its rich marine biodiversity and multiple habitats. The area is managed by Kenya Wildlife Service (KWS).
- Sand dunes along Shela beach on Lamu island have been gazetted as a water catchment area that acts as a vital source of groundwater to supply to local settlements that are recharged directly from rainfall and local runoff. This area is managed by the Ministry of Environment and Natural Resources; Department of Water; in conjunction with the Local Authority.
- Manda Toto area was demarcated as a community-managed MPA. This was managed by local organisations to protect the coral reef system there and limit fishing in that area. However, this





area lies in the way of the LAPSSET port programme that has led to the management of this area being effectively disbanded (For more information on the LAPSSET programme please go to [page 17](#)).

- Around Pate Island, there are multiple LMMAs. These have been introduced by communities and are supported by Northern Rangelands Trust and Fauna & Flora International. Within these areas, fishing is limited by season or outrightly banned to protect breeding grounds.
- There are plans for a second community-managed MPA at Kinyika rock. This area has extensive corals and is thought to be a vital breeding ground for fish and also the bottlenose dolphins. There is currently a signed MOU between relevant stakeholders and further research is in progress to find an effective management plan.

Arguably, the best examples of protected areas that have had a real impact on conservation efforts are the LMMAs based around Pate Island. As these areas are led and patrolled by members of the community they have had the largest impact in changing behaviours and protecting species.

For instance;

- Seasonal Octopus closures led to a larger population of Octopuses and a larger sustainable catch for local fishermen.
- Illegal fishing gear has reduced in these LMMAs as the community are made more aware of the harm in using them and the need for protecting young fish.

## Current legal framework for environmental conservation

Under the Environmental Management and Coordination Act (EMCA) 1999 the governmental body National Environment Management Authority (NEMA) was created.

EMCA aimed to provide for environmental protection through;

- Environmental impact assessment
- Environmental audit and monitoring
- Environmental restoration orders, conservation orders, and easements

While NEMA has been identified as the principal instrument of government charged with the implementation of all environmental legislation and oversee all activity with regards to the environment.

The core national legal frameworks that are relevant to Lamu archipelago are as follows;

- Environmental regulations - this ensures all projects are environmentally sustainable
- Water quality regulation
- Biodiversity regulation
- Waste management regulation



While NEMA aims to manage all environmental concerns in the region the authority itself is unable to enact laws, it is only able to report to law enforcement and has limited resources to inspect across the regions. This fact coupled with the communities large mistrust of authority figures due to many years of marginalisation has led to an authority that has the best of intentions but is left paralysed to act.

Though there is light at the end of the tunnel with [Kenya's Vision 2030](#) where the Blue Economy plays a key role in the development of Kenya into a newly industrialized, middle-income country providing high quality of life to all its citizens. In this vision, the President is quoted as saying; "Kenya is keen to fully realize the potential of its 142,400 square kilometre Exclusive Economic Zone. However, as we do so, we will steadfastly protect our marine resources even as we pursue its enhanced development and productivity."

What this is speculated to mean is that there will be greater investment in the protection of current marine resources, greater inspection for illegal fishing activities, greater investment into coastal areas and communities, investment to tackle ocean pollution and waste and a greater focus on the protection of ocean ecosystems.

As one of the first countries to sign onto UNEP's [Clean Seas](#) programme, there is a great hope that many of these promises may become actionable legislation.



# What is the Lamu Environment Foundation?



The Lamu Environment Foundation (LEF) amplifies the impact of current and future environmental conservation efforts around the archipelago. Through funding grassroots organisations on the ground, the fund empowers local community groups to take control of the conservation of their environments to create lasting impact and change. By connecting the dots between local organisations and finding projects and organisations to fill the gaps we ensure that all organisations are working effectively towards the shared goal of protecting the local environment.

## LEF will offer opportunities to:

- **Monitor;** Identify gaps in the overall knowledge and geography of the area and the activities being arranged to protect the environment while allowing for proper data collection from projects that can further future conservation and protection efforts.
- **Inform;** Improve environmental awareness in the area, encourage greater involvement in environmental protection by communities and other groups and strengthen the local network of environmental actors already present in the area.
- **Act;** collectively work towards more sustainable practices in the area.



## Why does Lamu need this foundation?

There are currently many grassroots organisations working at all levels to conserve the rich biodiversity of Lamu. However, many of these organisations are poorly funded meaning that organisations are not able to effectively continue their work or even grow their organisations to be able to do more. But with a cash injection, these organisations could do so much more and have a lasting impact on the environment.

The best way to conserve our environment is to engage local communities. By listening to the concerns of communities and supporting local organisations we can create long-term jobs that can provide a sustainable income to many and champion the conservation and environment industry.

As the fund will be supported by interested parties, we can use these contacts to find further funding or exciting partnership opportunities. Plus, the funds collected can be leveraged to attract larger grants from global partners. And due to the long-term commitment from donors, we can ensure that groups on the ground have the time to truly make a sustainable difference to their environment.





# Introduction to Ecosystems



## Mangrove Forests

Lamu Archipelago currently holds 68% of Kenya's mangrove forests. Mangroves are a vital part of the global environment and store more of Earth's carbon than terrestrial forests.

Mangroves play a vital role in the environment;

- They act as a shock absorber against shifting climatic conditions
- Provide a vital area for biodiversity by acting as nurseries for many species and nesting areas for birds
- Act as a buffer between the land it surrounds and the open ocean
- Prevents soil erosion
- They help to maintain water quality by filtering pollutants

The Mangroves in Lamu are subject to many of the threats they face elsewhere in the world - rising water levels, urbanisation and increasing use in the local construction industry. The final threat is currently the reason why mangroves in Lamu are being most exploited. As construction booms on the



mainland to cater for the creation of the LAPSSET project more and more ancient mangroves are being cut down.

## Coastal Environments

The total coastline of the Lamu archipelago is 130km. The types of coastline found here are beaches, bays, reefs, dunes and seagrass beds.

Each of these ecosystems provides a vital service to the overall environment. However, many of these areas have become threatened by human activity. Activities such as tourism, developments, mismanagement and plastic pollution are just some of the issues that have led to habitat destruction.

## Coral Reefs

Reefs surround many of the islands in the archipelago. Coral reefs play a vital role in protecting coastlines from erosion while also acting as a vital nursing area for many marine species.

Many of Lamu's reefs are not currently protected in any way. This can lead to unsustainable fishing practices such as drag-netting that catch everything including the vital 'coral caretakers' so the reefs aren't being maintained as they naturally would.

In recent years the dredging that has occurred for the LAPSSET projects has led to much of the reefs being covered by sediment. Finally, coral reefs are most susceptible to global climatic changes and rising sea temperatures. This has led to many areas of bleaching around the archipelago.

## Ocean Environments

The Lamu archipelago covers a large marine area and many fisheries traditionally supporting local communities. These fisheries were traditionally seasonal as the rough waters of the Kusi season make it impossible for artisanal fishermen to reach the open ocean. However, this traditional way of allowing fish stocks to regenerate has diminished. This is due in part to industrial fishing becoming more commonplace in Northern Kenya and the use of more unsustainable fishing practices in the archipelago due to the low yields of fish.

There are other threats to the marine environment such as:

- Marine pollution
- When the LAPSSET port is open, post-Panamax container ships are expected to pass which will threaten large mammal migration





- Rising sea temperatures

## Agricultural/Scrub Land

The inland areas of the archipelago are demarcated as agricultural land. However, due to harsh conditions and low water levels, it is a notoriously difficult place to farm. Traditionally fruit trees such as mango, coconut, limau and cashews have been the harvest of choice.

But, with sustainable permaculture practice, many crops can be grown on the island. A handful of these kinds of farms have shown to create a good yield and could be a sustainable way to create income for communities as well as effectively using the land and encouraging biodiversity.

# Threats to Ecosystems



## Population Pressures

The population of the Lamu archipelago has grown massively over the last few years, specifically on Lamu Island as more people travel here with the hopes of employment. Lamu County saw a 30% population increase between the years of 2009 and 2019 when the most recent census took place.

Due to the increased population, biodiversity loss and degradation has occurred. This is due to increased development on or near protected areas such as the water catchment areas on Lamu Island, increased construction meaning more mangroves are felled due to their use in local construction, finally, water levels are running low on the island and are not being managed to take population growth into account.

## Pollution

Both point and nonpoint pollution directly affect the archipelago. Non-point pollution consists mainly of the ocean plastics that are brought ashore from the Indian Ocean. Though apart from ocean plastics, much plastic and solid waste is generated across the archipelago. Due to poor infrastructure, this waste



is often dumped in or near the ocean, throughout towns and villages and on farmland on open piles where it's not sorted or managed.

This waste is harmful to oceans, farmland and water supplies. And to make matters worse, the waste - both organic and non-organic waste - is dumped together, so as it begins to 'decompose' the new 'soil' is often used as compost on local fruit trees and shambas. This soil is full of microplastics and harmful chemicals that find their way into food sources and leech into the land and water table.

Due to the lack of sewage treatment across the archipelago untreated sewage (blackwater) can often find its way into our oceans and now due to the increase of flushing toilets and lack of septic tanks into the land that poisons local wells. This is especially a problem in Lamu Town, a study found the presence of live e-coli in the water of wells. This especially poses a problem in the rainy season where the town is susceptible to flooding and when cholera outbreaks pose a high risk.

## Overfishing and Unsustainable Fishing Practices

Traditionally fishermen from Lamu archipelago would have used limited techniques to catch their loads. In the open waters, hooks and lines were used, while lobsters and octopuses were caught by divers. 30 years ago a catch on a good day was up to 550kgs. Today a catch of 50kgs is deemed a good day.

However, due to decreased fish stocks more invasive fishing techniques are now in use. Even artisanal fishermen are turning to nets known locally as 'jarife' that have very small holes that catch everything including juvenile fish which leads to decreased fish stocks in the future. Due to the desperation of local fishermen to provide for themselves, more and more juvenile fish and marine species are caught and sold on, including lobsters carrying eggs.

Fishing also occurs on or near coral reefs. This is damaging to the reefs but also a problem for fish stocks as reefs are a vital nursery for many species of fish.

Fishing has also become more industrialised, trawling and the use of Fish Aggregating Devices (FADs) are commonplace off the coast of the archipelago. Both of these types of fishing lead to bycatch and many juvenile fish being caught. Also, many FADs are often left abandoned, which increases the problem of marine litter and can cause further harm to marine species.

This type of fishing is mainly conducted by international fishermen, furthering the problem for artisanal and local fishermen as the fish stocks become depleted due to industrial fishing.



## Urbanisation + Development

As the LAPSSET project has gotten underway, large swathes of otherwise pristine environments have been put under pressure.

The LAPSSET port aims to be the largest port on the continent that can host post-panamax ships - currently, 2 berths are ready with the first ships due in September 2021. In preparation for the opening, large amounts of dredging have occurred damaging nearby reefs and other marine habitats. Local fish stocks have declined and the ability of artisanal fishermen to use traditional fishery areas and fishing practises has been negatively affected.

This destruction is only likely to grow as the port becomes operational and port traffic occurs. Further habitats will be destroyed if the plans for a tourist city are followed before 2030.

Full details of the LAPSSET plans can be found [here](#).

## Climate Change

As with many other places around the world, Lamu is particularly susceptible to climate change issues such as rising sea levels, increased temperatures, seasonal changes, and warmer oceans. There is a vital need to find ways of mitigating these issues.

Rising sea levels pose an initial threat to Lamu Island's water reserves as complete salination becomes a very real possibility for the water catchment area of Lamu.

# Opportunities for Engagement



The archipelago faces many ecological threats and challenges that are directly affecting human life, natural habitats and resources and biodiversity. Though if these challenges can be addressed, the overall environmental wellbeing could be much improved.

## Solid Waste Management

There is currently no efficient waste management system anywhere in the archipelago. Waste is dumped anywhere that is deemed suitable by the local communities and either left to rot, is burnt and on rare occasions is collected by the county. However, when waste is collected by the county it is simply taken to a larger unmanaged dumpsite on the back of Lamu Island.

Recyclable plastics, glass and metal are left to pile up with other waste materials. However, if this kind of waste was to be managed and sorted a new industry could be born across the Lamu archipelago and vital new jobs created.



With the continued reliance on plastic and other single-use items, this kind of waste is only expected to grow.

## Sewage Treatment

There is little to no management of sewage across the island. In traditional homes and areas without running water, long drop toilets are still in use. These pits are dug beneath houses that when full are emptied out and the composted remnants are not harmful.

However, with the advent of more flushing toilets, the same pits are used that are not secure enough to contain the dangerous fluid within. This can lead to wells becoming poisoned, untreated sewage runoff entering the ocean and the cause of disease outbreaks causing a massive threat to public health.

As more of these leakages occur the viability of safe, clean drinking water diminishes. And while septic tanks are recommended there is no oversight to ensure they're installed properly and very few members of the community are even aware of what they are.

## Sustainable Fishing Practice and Marine Protected Areas

Unsustainable and illegal fishing practices compounded with marine litter and climate change have led to a decrease in fish stocks.

However, if more protected areas can be established and better fishing practices encouraged through education, awareness, gear swaps and seasonal closures we can create a more sustainable livelihood for artisanal fishers.

Currently, Beach Management Units (BMUs) are easily corruptible, but if management and leadership training could be given a tidal change in behaviour could occur. Also by empowering the community to build their capacity in decision making and management local bylaws can be created and followed based on the desires of the community, thus making sustainable change.

More well managed and patrolled marine protected areas to ensure illegal activity doesn't occur would lead to a boom in biodiversity and more sustainable fishing for years to come.

The increase of trawlers off the coast of the archipelago also must be addressed and investigation and lobbying should be encouraged to ensure trawlers are not damaging seagrass beds and overfishing illegally.





If the waste of the archipelago was also better managed there would be less marine litter found. This would benefit the ecosystem in its entirety especially if ghost nets were able to be removed from the surrounding ocean.

Also as the Lamu archipelago holds some of the most extensive seagrass beds in Kenya, there is scope to create the world's first Blue Carbon Offset programme.

## Coral Reef Nurseries

Many of Lamu's coral reefs are damaged and as most hard corals grow on average only 10cms a year, restoring these reefs naturally is a hard task even with better controls and management. However, if a coral reef nursery could be established, the low stress environment would enable coral to grow much faster. This would give coral reefs a good chance of recovery and regrowth.

There has been some work in Kenya to establish these kinds of nurseries in Shimoni and Diani with [REEFolution](#). Since 2016 125 nurseries have been established and 15 jobs created. This is a model that could be replicated with great success in Lamu.

## Mangrove Reforestation

Currently, there is little oversight for the harvesting of mangrove trees. Although there are protected areas of mangrove forests throughout the archipelago illegal logging persists. More awareness and education must be given to the importance of mangroves. Especially as the population and construction increases.

Mangrove planting and nurseries are an ideal way to engage people and a possible way of providing ethical and sustainable incomes. Finally, as the Lamu archipelago holds the majority of Kenya's mangrove it is worth investigating the efficacy of a Mangrove Forest Carbon Offset programme.

## Water Conservation

Freshwater is a large problem across the archipelago. The only island in the region with a source of 'sustainable' freshwater is Lamu. However, the water catchment area is under threat due to illegal building, land grabbing, sand harvesting, waste and climate change.

The water catchment area is a 12km stretch of sand dunes between Shela and Kipungani beaches. This area is thought to be prime real estate that it's currently forbidden to build on. There is also speculation



that the pumping is excessive in order to drop the water levels to be a feasible catchment area, turning Lamu into a desert island but making the prime real estate available to be sold. Once this happens large parts of Lamu Island will become inhospitable.

Lobbying for greater water protection needs to be encouraged and supported to protect the sustainability of life on Lamu Island.

Many villages across the Lamu archipelago - especially those on Lamu island - rely on local wells for their daily water needs. However, as less rain falls each year due to climate change and the rapid urbanisation in parts of the island it is very difficult for these wells to be replenished.

On Lamu Island and in most parts of the rest of the archipelago there is little to no rainwater harvesting. During the monsoon season, the streets become flooded and the excess water flows into the ocean. There is no drainage on roofs and no collection on the streets. However, it will become more and more imperative to collect rainwater, so activities to encourage this should begin as soon as possible.

## Protection of Indigenous Birds

Lamu archipelago has a wide range of indigenous bird species and the northern part of the archipelago has been gazetted as an important bird area. However, as the invasive Indian Crows become more common on the archipelago they are harming natural biodiversity and eating many of the indigenous birds. Before the numbers were managed by controlled poisoning. However, it is no longer possible to obtain the poison. This is being lobbied against across Kenya as the Indian Crows cause havoc across communities and ecosystems across Kenya.

If a controlled culling could be managed this would be of benefit to indigenous species.



# Local Champions



## Waste Management

### Shela Environment Residents Group

SERG are closely related to LAMCOT and are managed by many of the same team. The focus for this group is to keep Shela village and the beach clean. They do this by arranging daily beach cleans and daily collections of waste from homes in the village. Roughly 200kgs of waste is collected daily.

Currently, they have a small area for sorting and no facilities to recycle. However, the group are working to form a closer partnership with other waste management groups across the archipelago.

### Matondoni Youth Initiative

A registered Community Based Organisation (CBO) based in Matondoni village on Lamu island. The group were founded to support vulnerable youth, especially orphans and women in the area. They have supported the creation of cottage industries for women to support themselves independently. This has



consisted mainly of using traditional skills but the group want to expand to find a way to use waste products.

The group have also been campaigning for the creation of a sorting site in the village. Currently, there is nowhere for the community to put their waste so it is left to wash into the ocean or be burnt on open pits in the village. However, if a sorting site is created the team would like to be able to connect to other waste management organisations on the island to begin recycling.

### [Red Cross Kenya](#) - Innovation Lab

Red Cross has started a new initiative in Lamu County - the IOME (I owe me) Innovation Lab. This is a one-stop shop for many kinds of skills. Specifically, with regards to waste management, they're looking at setting up a consortium in the area to connect collectors with recyclers and assist in the development of recycling capabilities on the archipelago to build enterprise.

They have been working in partnership with Pamoja Initiative and NRT in Kiunga reserve to assist with community clean-ups and plastic shredding.

### Takataka Heroes

*Please note the author co-founded this organisation and continues to participate in activities as an advisor.*

This CBO aims to create a robust circular economy for waste management in Lamu. Their primary focus at the moment is the collection, sorting and shredding of waste plastics as this material is most easily recycled on the island and is all they have the capacity for with limited funds. However, they'd like to expand and be able to recycle all waste including glass, metal and compost.

The group arranges regular plastic collections where waste plastic is brought to the site, weighed and paid for - thus showing the community the value of waste. The plastic is then sorted, cleaned and eventually shredded to be extruded on-site or sold.

Ideally, the organisation would like to partner with existing organisations with an interest in waste management to create a greater impact.

### Manda Island Residents Group

This locally organised group focuses on the collection of waste from homes and beaches. Currently, the only funding they receive is from a selection of Manda residents. As Manda does not have reliable electricity they are unable to do anything further with the waste they collect.



The group are keen to partner with other organisations focussing on waste management in the area to find a way to manage waste together.

## Bahari Moja

Bahari Moja is an integrated ocean trash and plastic recycling project started in 2019 in Mkokoni village, Lamu County - this village is situated at the northern part of the archipelago. The project seeks to address the issue of marine litter and community plastic waste in some of the remote coastal areas of Lamu County.

This group is working alongside PAMOJA Initiative, Northern Rangelands Trust, Kiunga Community Wildlife Association (KICOWA), Kiwayu Safaris (private sector partner), The Nature Conservancy, Fauna & Flora International and County Government of Lamu.

The group need to secure larger funds to progress their work as well as find sustainable ways of dealing with the waste they collect. Due to the remote nature of many of these communities, transport is a large problem.

The group are keen to come together with other waste management initiatives to find a way to manage this growing problem.

*Please note that during the drafting of this report discussions between SERG, TTH and MRG have taken place to plan out ways for the groups to work closer together focusing on their strengths and current capabilities. Once an agreement has been made, the umbrella group aims to encompass all organisations working to tackle the plastic pollution problem so the archipelago has a clear and concise way forward.*

## Ocean Ecosystem Management

### Kililana Youth Organisation

Registered youth group working with 20 active members in Lamu Island. They're working to plant mangroves and establish mangrove nurseries around Lamu Island. They work 5 days a week to plant and monitor growth and the success of planting sites. They have planted approximately 1.5 million mangroves since August 2020. They are currently working and being funded by the [Eden Project](#).



## Lamu Marine Conservation Trust

Founded in 1992 in reaction to illegal turtle harvesting, LAMCOT has been working to preserve turtle habitats in and around Lamu and Manda islands. The organisation has since grown to encompass turtle conservation, environmental education and awareness, coral conservation, mangrove plantation and best fishing practices.

LAMCOT were behind the introduction of the community MPA at Manda Toto and the proposed site at Kinyika.

They'd like to begin mapping sea mammal movement and ensure proper protection for breeding, feeding and nursery areas. Ideally the group would like to have a full time marine biologist to assist with the direction of projects. A potential partnership with Kenyan universities is being investigated to create more interest in the area.

### [Fauna & Flora International](#), [Northern Rangelands Trust](#), [The Nature Conservancy](#)

These three international organisations are working in partnership in the northern parts of the archipelago in the NRT conservancy areas of the Pate Marine Community Conservancy and the Kiunga Community Conservancy.

Their work is extensive in building capacity within communities, protecting key marine habitats and supporting more sustainable livelihoods and fishing.

Specifically, they are working to empower existing LMMAs in governance and marine patrols. This will encourage biodiversity, seasonal closures to allow for growth, stronger by-laws and cooperation with fisheries ministries. Currently, 200 hectares are covered.

They're working on capacity building by strengthening local governance within BMUs and conservancies by educating communities on the importance of effective BMU, by-laws, providing management and governance training and allowing capacity for in-depth data collection to monitor changes within the environment.

The groups are issuing microfinance loans to active conservation members in the conservancies to fund new business enterprises. The idea is to reward those who are working in conservation and also to find viable income stress that doesn't solely rely on fishing income.





They're also working to tackle illegal fishing gear by creating awareness and offering gear exchanges and supporting patrols to prevent bycatch. Mangrove reforestation is also being spearheaded in the area by a women's group.

The groups wish to introduce a Fish 2 Market scheme that provides connections to fish markets elsewhere in the country for sustainably caught fish to ensure fishermen are getting fair prices for their catch.

They'd also like to further their reach in terms of water projects, education bursaries, grow the microfinance scheme, more sea turtle protection, greater wildlife security, management of marine litter, mapping of seagrass beds and more research into marine mammals in the area.

## Freshwater Management

### Lamu Water Resources Authority + Amu Island Water Resource Users Association

These groups work alongside [Lamu Water and Sewerage Company](#) (LAWASCO) to provide oversight, advice and to provide support in cases where LAWASCO are unable to deliver and meet community needs.

LAWASCO is a government institution under the Ministry of Water that's responsible for providing water to residents. However, this organisation is under many pressures due to mismanagement, not being supported by the government, weak manpower, having to rely on mains electricity for distribution which is expensive and not reliable and finally to becoming politicised - i.e. people being appointed to run the company with no understanding of water resources but are close to the government.

This is where [Lamu Water Resources Authority](#) (LWRA) and Amu Island Water Resource Users Association (AIWRUA) have stepped in to find and advocate for better ways to manage this vital resource.

The groups have been working to promote awareness and understanding of the need to protect this resource by holding speaking events with communities, children and specifically women. They've also worked to increase tree coverage on the dunes to improve percolation and catchment, have introduced composting toilets at settlements near the catchment area to protect the water below, built rainwater harvesters at 2 schools on the island and are supporting the water provider to minimise concern.



The groups would like to be able to introduce more rainwater harvesters as well as promote small communities to build community harvesters. Another major concern is to help LAWASCO find funds to be able to switch to solar power to save KES 1,000,000 per month.

## Land Management

### Basode Youth and Women Empowerment Group

Registered as a CBO in 2020 this group is based in the Lamu Town area and work to provide education and support of small-scale sustainable farming and agriculture so families can become somewhat self-sufficient. The group also regularly take part in beach cleaning and have an enthusiastic group of young members that give regular talks about environmental issues.

### Sisters 4 Change

A women-led CBO in Lamu Town. The founder is a keen environmentalist and has in the past interned at WWF. Currently, the group provides support to young women and girls and distributes sanitary products and raises awareness of how to properly dispose of them.

The overarching dream of the organisation is to integrate local women into conservation. They would do this by promoting composting for sustainable farming practices, raising awareness of the importance of trash separation and providing education on mitigating climate change.

### Pamoja Initiative ([Safari Doctors](#))

This initiative was set up to address the common goal of protecting the environment in and around the Lamu archipelago by highlighting the connection between population health and the environment.

The team have trained and empowered 'Youth Health Ambassadors' to come together to find innovative and community-led ways to protect the environment. The kind of projects the health ambassadors have undertaken range from building toilets, garbage collection points, plastic collections and the installation of water tanks in schools.

PI have also led community debates and education on the topic of our environment showing youths that they too have a voice and are able to speak up. As well as supporting the formation of a village committee in Faza that encompasses the BMU, county, elders and fisheries to empower them to act for themselves and their environment. The committee has begun organising cleanups and waste collections.

The initiative has worked with NRT and Red Cross to support plastic collection and shredding in Kiunga.



## [Save Lamu](#)

Save Lamu was created to advocate for the community with regards to large developmental projects. They have successfully lobbied to see off the building of a coal-fired power plant on Lamu island and are actively working to force the government to find mitigation measures for the inevitable decline of traditional livelihoods and communities due to the LAPSET project.

The group also undertakes awareness-raising activities on the environmental, social, & political challenges facing the peoples and environments of Lamu. They do this by preserving the cultural and social identity of marginalised indigenous communities in Lamu and advocate and lobby for the recognition of the communities natural resource rights.

On a day to day basis, the group is working towards a vision of a safe clean Lamu - this work is more focussed on Lamu Island specifically. They would like to raise more awareness on the importance of cleanliness and are keen to work with other organisations working to improve waste management in the area.

## **Earth Love LTD**

This for profit company is in the process of setting up a CBO focussing on sharing and training the community in permaculture practices that have been tried and tested on Lamu Island. The aim is to empower the community to be able to grow their own healthy and organic foods and potentially reignite the agricultural industry on the island.

They would also like to set up regular 'farmers markets' where people can come and sell their produce and/or crafts where knowledge and seedlings can be shared. It's their vision to see Lamu island flourish organically and to kickstart a new industry on the island.