FLIPFLOPI PROJECT IN KENYA MANAGING MARINE WASTE AND SUPPORTING BOAT BUILDING INDUSTRY

August 2025

The Flipflopi project continues its work in Kenya supporting local communities to find solutions for managing marine waste through the creation of closed-loop waste management systems where items can be recycled after use and later made into new products. This includes the development of a plastic boat building industry.

The Flipflopi, in fact, was the world's first sailing boat made entirely from waste plastic and flip-flops collected from beaches and towns along the Kenyan coast.

Flipflopi made global headlines in 2019 when it sailed 500 kilometres from Lamu, Kenya to Zanzibar, Tanzania as part of the UNEP Clean Seas initiative, creating international awareness of the impact of plastic pollution and working to change mindsets and behaviours about plastic waste. In 2018 the UNEP website published a series of wonderful articles presenting the story of the Flipflopi project created in Lamu in 2016 collecting about 10 tonnes of plastic garbage, including about 30,000 flip-flops, to use them to build the first dhow.

The project's success demonstrates the potential for artisanal boats made from waste plastics and equipped with electric engines and boat-mounted solar charging systems, paving the way for zero-emission transportation solutions. The solar electric engine project was made possible with the support of maritime engineering experts at Newcastle University in the United Kingdom, with funding from the UK government's International Science Partnerships Fund.

The FlipFlopi was a spectacular success, not only as a piece of innovative engineering, but more importantly as an environmental campaign. For two years, the boat docked at ports in numerous cities and towns across Kenya, Tanzania and Lake Victoria, attracting thousands of spectators including lawmakers and students.

The FlipFlopi Project based on Lamu Island, a UNESCO World Heritage Site, off the coast of Kenya, is managed by the Flipflopi Foundation Limited, incorporated in the Republic of Kenya and it operates as a not-for-profit structure.

The FlipFlopi Project Annual Report 2024 highlights the impact results they have achieved during the year, pioneering sustainable solutions to end plastic pollution in remote shoreline communities through community-driven circular solutions rooted in local heritage. The project collaborates with coastal communities and residents,

organizations, authorities, local businesses, and a consortium of interdisciplinary experts to reduce, collect and transform plastic waste into a construction material for boatbuilding.

Waste management systems in the Lamu Archipelago are limited. As the population grows, gaps in infrastructure and policy are becoming more visible. Without proper systems in place, most waste is dumped, burned, or buried, with plastic waste posing the greatest challenge.

In 2022, in response to these urgent needs, the project launched a circular economy model for plastics. A baseline survey revealed that nearly all respondents viewed plastic waste as a problem in their daily lives. At the time, 44.6% of plastic waste was being dumped, 38.7% burned, and 16.6% buried. With support from the Sustainable Manufacturing and Environmental Pollution (SMEP) Programme, the Flipflopi Project established the Lamu County's first material recovery and recycling facility. This facility focuses on recovering and reprocessing both ocean-bound and ocean-based plastic while supporting the broader shift from linear to circular systems of production and consumption. Today, the model reaches an estimated 33,000 people across the Lamu archipelago, plus another 6,000 on the mainland, covering more than 70% of the island population and nearly a third of the region's population overall.

A Flipflopi Toolkit was created to help address this work from the ground up. The approach focuses on practical, community-based solutions that treat plastic waste not as a nuisance to be burned or buried, but as a material that can be recovered, repurposed and turned into value. Through innovation, partnership and local leadership, the project is turning the tide on plastic pollution.

The FlipFlopi project from June 2022 to March 2025 has achieved the following impact results:

- The project has achieved an average of 22% reduction in recyclable plastics at dumpsites.
- A 2024 report by UNCTAD and the UK-FCDO ranked the Flipflopi model as having the highest projected health gain of all projects assessed, with an estimated 24 years of life gained for every 1,000 tonnes of plastic recycled.
- Over 300 tonnes of CO_2 equivalent emissions have been reduced or avoided through project activities.
- More than 300 community members have been trained in citizen science to support local data collection and environmental monitoring.
- The project has created 30 permanent jobs, with 40% of these held by women, and contracted over 50.
- It has directly injected over $70,000 into a network of more than 1,000 community collectors and groups, 60% of whom are women.
- The project has received formal recognition from both the Lamu County Government and Kenya's National Environmental Management Authority (NEMA).
- A draft bill has been submitted to the East African Community, aimed at eliminating unnecessary single-use plastics across the region.

The Project website resume the results achieved: 300+ tons of plastic recovered to-date; 40+Artisanal recovered-plastic products have been manufactured; 3 Boats have been built; 100% product sales go back to Lamu community. In the website it is also possible

to know the Catalogue of their high quality, durable products made from locally sourced and recycled plastic waste from communities of Lamu.

One of the other initiatives that the Flipflopi Project recently started is the production of *a taxi dhow* made with 100 per cent in-house designed and manufactured moulds and locally collected and recycled plastic. The Taxi dow is currently being tested for commercial use. At 7 meters in length, this prototype dhow is part of the Sustainable Manufacturing and Environmental Pollution (SMEP) Programme, which enabled the design and build of the water taxi itself. The project was brought to reality through collaborative partnerships with UK based ePropulsion, which supplied the battery-powered engine, and Kenyan based Solagen, which supplied the solar systems.

The Clean Seas Campaign is part of UNEP's broader work on marine litter and plastic pollution and contributes to the goals of the Global Partnership on Marine Litter. This initiative is a voluntary open-ended partnership for international agencies, governments, businesses, academia, local authorities and non-governmental organizations to cooperate and innovate in tackling marine litter and plastic pollution. To date, 63 countries from around the world have joined the campaign. Commitments by signatory countries now cover more than 60 per cent of the world's coastlines.

The Flipflopi project is a fantastic illustration of how environmental techniques and traditional craftsmanship can be combined to create something remarkable and influential. Many international organizations and magazines specialized in environmental issues have published articles highlighting this fantastic experience underway in Kenya.

To know more

Flipflopi Project website

Flipflopi story

Flipflopi Blog

Flipiflopi in Facebook

Flipiflopi Project 2024 Report

Flipflopi Dows expeditions

Flipflopi designs

Toolkit.theflipiflopi.com

Article in africanewsanalysis.com

Article in newscentral.africa

UNEP Article 2018

UNEP Article Flipflopi Launch 2018

UNEP Article 2021 Second xpedition

UNEP Article 2022

UNEP Clean Seas Campaign

Article in smeprogramme.org

Article in southsouthnorth.org

Article in ncl.ac.uk