

Nairobi Convention



Updates on demonstration projects for the WIOSAP Project
*(Implementation of the Strategic Action Programme for the Protection
of the Western Indian Ocean from Land-Based Sources and Activities)*



FIND PROPOSALS FROM:

Comoros	2
Kenya	3-4
Madagascar	5-6
Mauritius	7
Mozambique	8
Seychelles	9-10
South Africa	11
Tanzania	12-13

INTRODUCING WIOSAP PROJECT PROPOSALS

Innovative Efforts to Reduce Land-Based Stresses on the Western Indian Ocean soon to be underway

What we do on land has a direct impact on our oceans. Activities such as poorly-planned development, pollution, deforestation, etc. can place undue stress on our marine and coastal resources—putting our ecosystems, jobs, and even health at risk.

The Nairobi Convention, whose ten Contracting Parties have resolved to reduce land-based stresses on the Western Indian Ocean, is well-placed to harness the capacity, partnerships, and political will necessary to tackle such a challenge. The Nairobi Convention Secretariat is executing several regional programmes to address the environmental challenges facing the Western Indian Ocean (WIO). One of these, the GEF-funded WIOSAP project, strives to reduce land-based stresses by protecting critical habitats, improving water quality, and managing river flows.

To this end, the project is funding several demonstration projects in WIO countries to address various land-based stresses, with the aim of developing best practices that may be implemented elsewhere in the region as appropriate.

Proponents from eight countries submitted concepts for review by the National Implementation Committees (NICs) in each country. The NICs then submitted a maximum of three concepts for regional expert review through the Project Management Unit (PMU). Based on pre-determined and agreed selection criteria, the PMU then submitted several recommended concepts to WIOSAP's Project Steering Committee (PSC) for full proposal development (meaning that logical frameworks, budgets, monitoring plans, partnerships, etc. were articulated). Of these, **twenty full proposals** were further developed and **accepted by the WIOSAP's Project Steering Committee (PSC) for funding**, paving the way for implementation. Several other proposals are under development and will be considered for funding in the near future. Keep reading to find out how the funded demonstration projects intend to contribute to the reduction of land-based stresses on the marine environment! Match the number listed in the project title to the number on the map to find out where the on-the-ground intervention will take place.

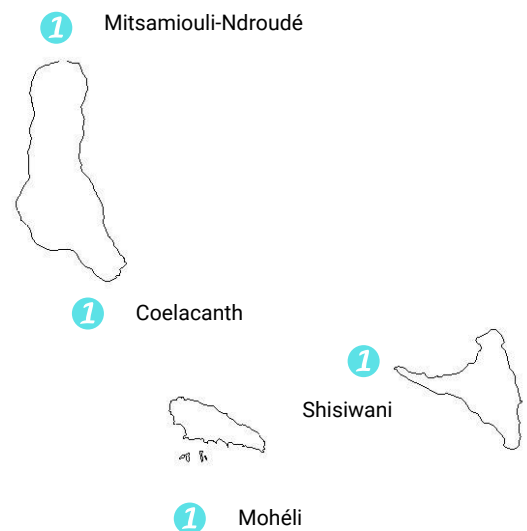
Although all concepts received cannot be funded by the WIOSAP project, all address critical regional needs and are worthy of consideration. Summaries of all proposals submitted to the PSC (grouped into three categories—Recommended by PSC for funding; Recommended by PSC for full proposal development; and Seeking Funding) are included below, in the hope that partner organizations or institutions may help to bring such worthwhile projects to fruition. **The Nairobi Convention Secretariat encourages partners interested in funding a proposal – or in collaborating on the twenty approved projects – to email jared.bosire@un.org.**

COMOROS

Recommended for funding by PSC

Sustainable management of shallow marine habitats in the Comoros through improved management planning and rehabilitation of degraded sites (1)

Comoros' oceans and coastlines feature astounding levels of biodiversity and species that can be found nowhere else on earth. However, a growing population and natural resource exploitation threaten these unique resources. In response, the Comorian government has designated a Marine Protected Areas (MPA)—or an area of ocean or coastline that has been specially-designated for protection for the benefit of nature and people—in Mohéli, and plans to designate an additional three MPAs in Coelacanth National Park, Mitsamiouli-Ndroudé National Park and Shisiwani National Park by 2021. This project aims to strengthen both the management of these MPAs and the resilience of their marine habitats through mangrove and seagrass rehabilitation. Expected outcomes include an approved management plan for all four MPAs; the rehabilitation of 1 hectare of mangrove forests and 1 hectare of seagrass; and enhanced capacity of local communities



Map of Projects in Comoros

to participate in site management plans and restoration activities. **Proponents:** General Directorate of Environment and Forest; Comoros National Parks/Protected Areas Project, Association pour la Protection de L'Environnement aux Comores; and local communities.

KENYA

Recommended for funding by PSC

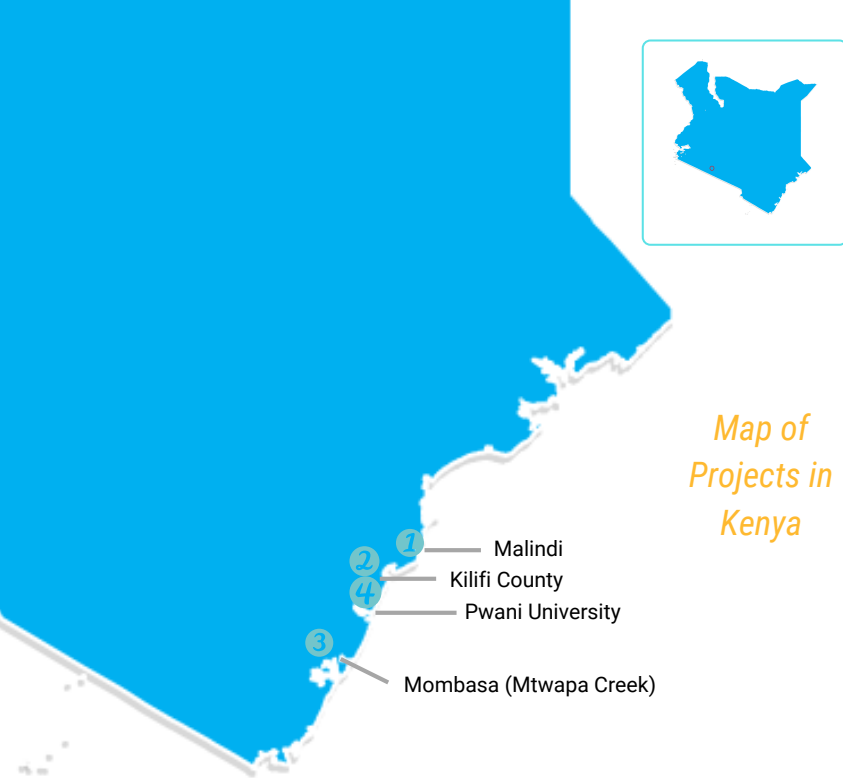
Enhancing stakeholder capacity on use of ICZM as a tool for conservation of the coastal and marine environment through a demo ICZM Project in Malindi – Sabaki Estuary Area: (1)

New infrastructure and developments have dramatically altered Kenya's coast over the past decade, leading to improved local livelihoods. However, increased use of marine and coastal resources by various sectors has led to over-exploitation, erosion, pollution, and uncontrolled development. Implementing Integrated Coastal Zone Management (ICZM), a tool that brings all stakeholders together to develop, manage, and use the coastal zone, would ensure that future development in the Malindi-Sabaki Estuary Area is sustainable and protective of the environment. This project aims to enhance local authorities' capacity to implement ICZM by promoting an integrated approach to resource management. Expected outcomes include improved mangrove and fisheries management; alternative livelihood options for the local community; and improved solid waste management, among others. **Proponents:** Nature Kenya, NEMA, Kilifi County government, Kenya Forest Service, Kenya Fisheries Service, Water Resources Authority.

Towards Integrated Spatial Planning for Sustainable Management of Coastal and Marine Resources in Kilifi County, Kenya: (2)

Kenya's coastal and marine resources provide numerous benefits to coastal communities, including food, employment, protection from climate change, and more. However, inclusive planning, development, and management of resources is imperative to ensure that these benefits can be enjoyed by future generations of Kenyans. This project seeks to support the development of a Kilifi County Spatial Plan, which would define sustainable land usage; support socio-economic development; ensure environmental sustainability, and provide strategies to deal with urbanization, transportation, agricultural expansion, and other threats. In addition to supporting the development of the plan, the project would also establish a GIS lab for integrated data management and identify at least one critical Ecologically and Biologically Significant Areas (EBSA) in Kilifi. **Proponents:** World Wide Fund for Nature, Kenya, Kilifi County Government, and NEMA.

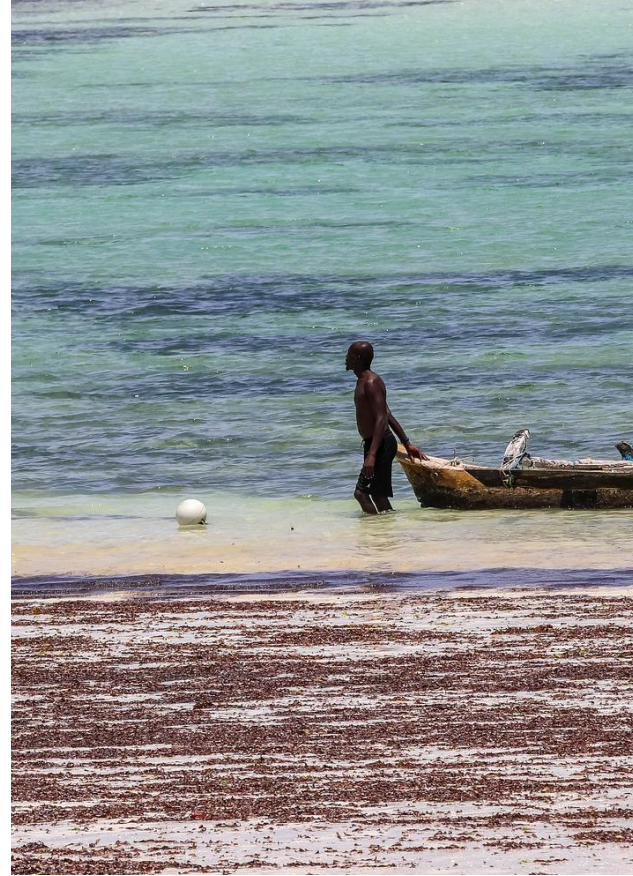




Map of Projects in Kenya

Improving Mtwapa Creek water quality by use of Constructed Wetland technology for wastewater treatment model in Shimo la Tewa Prison: (3)

Discharge of domestic, industrial and agricultural wastes into marine and freshwater ecosystems causes deterioration of water and sediment quality, thus compromising the marine resources used to spur national development and improve community livelihoods. Shimo la Tewa prison is located near Mtwapa Creek, housing over 4,000 prisoners. Wastewater from the prison is only partially treated before being discharged into the creek, thereby polluting the marine environment and negatively affecting surrounding communities dependent on the creek for their livelihoods. A redesigned and rehabilitated wastewater treatment system is thus needed to conserve the creek's marine resources. The project aims to use a constructed wetland to demonstrate how "green infrastructure" can be used as a cost-effective way to manage wastewater, a technology which can be replicated nationally and regionally. The wetland will directly improve Mtwapa Creek's water quality and sanitation in Shimo la Tewa. Food security will also be enhanced, as the treated water will be used for fish and crop production. **Proponents:** Kenya Marine and Fisheries Research Institute, NEMA, Shimo la Tewa prison, and GreenWater



Seeking Funding

Constructed Wetland Wastewater Treatment Plant at Pwani University in Kilifi County (4):

According to the project proponents, waste management remains a challenge in several coastal towns. Sustainable and effective waste management systems are thus needed to protect marine ecosystems from wastewater run-off. The project aims to demonstrate how to stem untreated wastewater pollution by adapting to a cost-effective and environmentally-friendly wetland wastewater treatment technology. The project seeks to construct a wetland wastewater treatment plant at Pwani University in Kilifi County and establish the treatment plant as a research, learning, and teaching facility so that a) sanitation is improved and water demand decreased; b) treated wastewater is re-used for irrigation by the university and community; c) local communities are trained on sustainable wastewater management, and d) its technology can be replicated elsewhere in the country or region. **Proponents:** Pwani University, Kilifi County, NEMA, Coast Water Services Board, and partners.



MADAGASCAR

Recommended for funding by PSC

Strengthening regulatory framework and national capacity for monitoring effluent discharges, water, and sediments quality in coastal and marine areas of Madagascar (1):

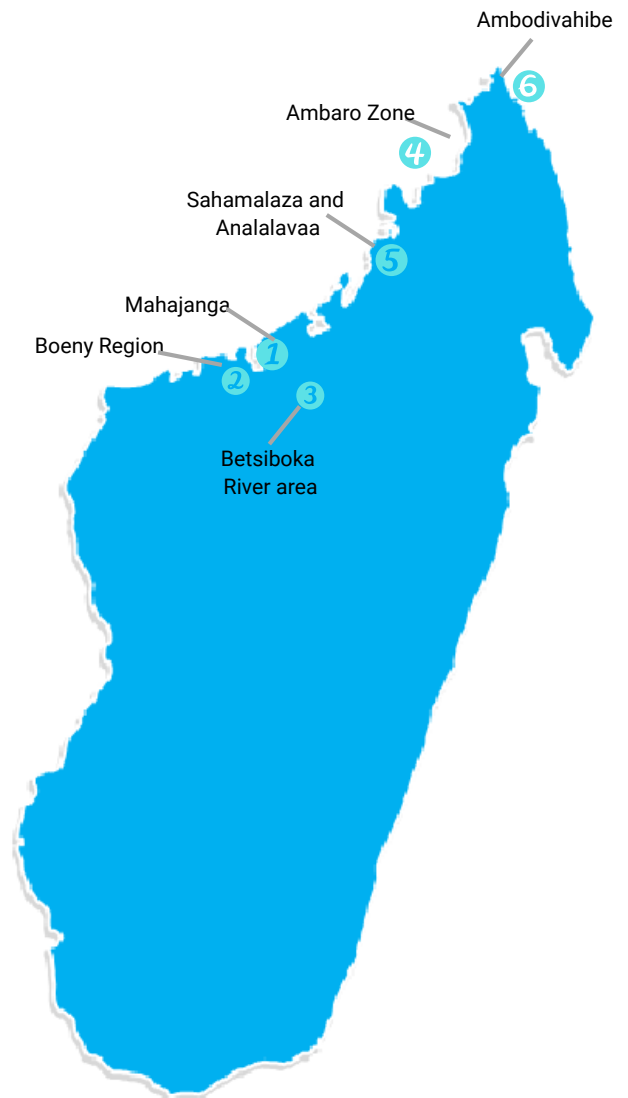
The Bombetoka Estuary is highly vulnerable to pollution from Mahajanga city's tourism, agricultural, industrial, and other sectors. Tests of the water by the National Centre For Environmental Research (CNRE) indicate the presence of toxic heavy metals and hydrocarbons that pose serious risks to both human and marine life. The project will demonstrate how water quality and sediments can be improved by developing a regulatory framework and monitoring system—a framework which will provide the basis for the development of national wastewater standards. Both institutional and human capacity to monitor pollution will thereby be strengthened—and the risks to human and marine health reduced. **Proponents:** CNRE, Ministry of Environment, Ecology, and Forests (MEEF), and partners.

Sustainable management of Mangroves in Boeny Region (2):

The mangrove forest in Boeny, Madagascar, is in danger of disappearing due to pollution and competing uses of the forest and its surrounding areas by developers, local communities, tourism operators, and more. A management plan that incorporates the views and needs of all stakeholders is needed to ensure sustainable use of the forest. This project aims to promote inclusive, sustainable management of the mangrove forest that includes training, awareness-raising, and adoption of best governance practices. Outcomes would include the establishment of: a) a system of governance for the mangrove forest; b) alternative livelihoods for local communities; and c) an updated database and monitoring and evaluation system. Ultimately, these outcomes will serve to preserve the long-term health and ecological integrity of Boeny's mangroves, an approach that could be replicated in other areas of the country. **Proponents:** CNRE, MEEF, University of Mahajanga, and partners.

Sustainable management of E-flow for west coast rivers of Madagascar (case of Betsiboka river) (3):

As outlined by the project proponents, deforestation around the Betsiboka River catchment has had an alarming environmental impact on the surrounding areas, resulting in poor water quality; reduced yields for fisheries; soil erosion; and alteration of river beds, flow, and discharge. Other rivers in western Madagascar suffer from similar threats. A report by the National Authority for Water and Sanitation highlighted the need to improve management of exploitation of water resources. This project therefore aims to create a sustainable management system for rivers and basins in western Madagascar by conducting a pilot environmental flow assessment (EFA)—i.e. a determination of the quantity, quality, and timing of river flows needed to sustain ecosystems and their services—in the Betsiboka River, which will then be replicated in other rivers. Guidelines for EFAs will be created and the capacity to apply EFAs increased, which in the long-term could result in safer, healthier, and sustainable water



Map of Projects in Madagascar



resources in the river catchment area. **Proponents:** MEEF, Ministries of water; sanitation and hygiene; agriculture, fisheries and fishery resources; and meteorology; and partners.

Seeking Funding

Sustainably planning and managing resources in the Ambaro Zone (4):

The Ambaro Zone in the north of Madagascar boasts five marine protected areas, three marine national parks, and three Protected Seascapes. Nevertheless, a Regional Territory Planning Scheme report underscored that Ambaro's sustainability was under threat from population increases and overuse by competing sectors. This project proposes undertaking a diagnostic analysis to map biological and ecological areas, current human activities and pressures, and possible conflicts and compatibilities among existing uses. The analysis will provide the region with information and data to sustainably plan and manage coastal and marine resources in the Ambaro Zone. **Proponents:** WWF Madagascar, MEEF, and Diana Region.

Economic Valuation of Sahamalza and Analalava (5):

In Madagascar, new initiatives are underway to identify new Marine Protected Areas (MPAs), in line with the President's 2014 pledge to triple the amount of territory covered under such protected areas. Nevertheless, the project proponents note that there remains a lack of knowledge on the economic value of marine and coastal resources in existing and potential MPAs, particularly in Sahamalaza Marine Protected Area and Analalava Area. Economic valuation will be critical in helping Analalava qualify for protected status and to helping manage the protected area of Sahamalaza. The project will result in the integration of economic values of marine resources into the development and implementation of marine spatial planning. **Proponents:** Centre of Economics and Ethics for Environment and Development, MEEF, Territory Management Ministry (MATSF), and partners.

Strengthening and expanding community-based management of Ambodivahibe critical habitats (6):

The Ambodivahibe Marine Protected Area (MPA) in Madagascar is part of the Northern Mozambique Channel, recognized as the second most diverse marine region on Earth. Despite sheltering coral reefs, seagrasses, mangroves, two deep bays, and a cool water upwelling system, Ambodivahibe suffers from poaching and land-based pollution, as noted by the project proponents. This project strives to ensure the sustainable management of the MPA through restoring degraded areas, promoting Integrated Coastal Zone Management (ICZM), and developing new tools and methodologies for management. The project will result in the development of a critical habitat management plan, the restoration of at least one critical habitat, and increased capacity in ICZM among local actors. **Proponents:** Conservation International, MEEF, MATSF, Decentralized Environment Office (DREEF), and partners.



Local people's fishing boat, Anakao, Peter H. Koldesch 2012. grida.no/resources/1328

There remains a lack of knowledge on the economic values of marine and coastal resources in Marine Protected Areas

MAURITIUS

Recommended for funding by PSC

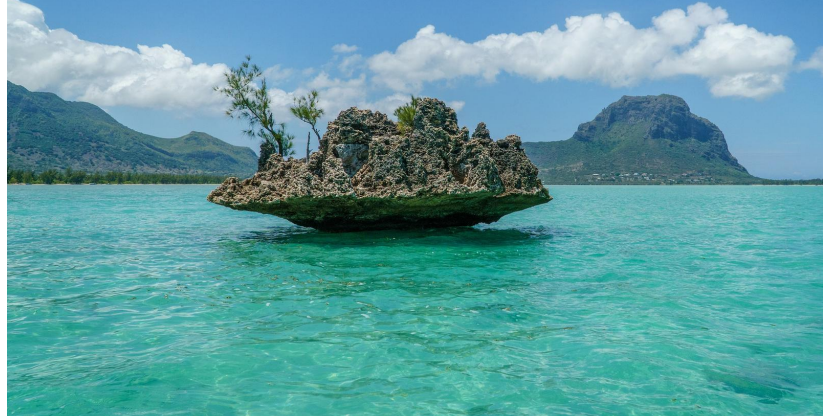
Assessment of Blue Carbon Ecosystem (Seagrass) (1):

Seagrasses are breeding grounds, refuges, and food sources for marine life, meaning they support both biodiversity and the fisheries sector. Nevertheless, as outlined by the project proponents, seagrass meadow distribution has been receding as the tourism industry in Mauritius surges. This project aims at reducing the vulnerability of seagrass along Mauritius's coasts by monitoring their characteristics and identifying marine sensitive areas for protection. It will undertake sediment coring at seagrass sites to determine their carbon storage capacity. Additionally, the study will produce a map showing the distribution patterns and abundance of seagrass. The project will also develop techniques for seagrass planting/rehabilitation and produce an economic valuation on these habitats. Finally, the project will share knowledge and techniques on sediment coring and monitoring with other stakeholders so that these methods can be replicated elsewhere.

Proponents: Ministry of Ocean Economy, Marine Resources, Fisheries and Shipping and partners.

Habitat restoration and attraction of seabirds to Ile aux Aigrettes (2):

Invasive species pose a major threat to the biodiversity of Ile Aux Aigrettes. Indeed, as the project proponents emphasize, the island's native flora and fauna were nearly destroyed by the introduction of exotic species. This project seeks to restore the native terrestrial habitat and seabird community in Ile Aux Aigrettes by reintroducing the native species to the island, which would help restore the functioning of the natural ecosystem. As a result of this project, the habitats for hundreds of pink pigeons, Mauritius Fodies, and olive white-eyes will be supported; fourteen hectares of land will be weeded of invasive species; and thousands of plants will be replanted - all of which will increase resilience of this critical coastal ecosystem. **Proponents:** Mauritian Wildlife Foundation and Birdlife International.



Coral culture for small scale reef rehabilitation (3):

Coral reefs support scores of marine species and serve as sources of food, jobs and livelihoods. As an island state, Mauritius depends greatly on coral reef resources, but numerous bleaching events have caused the amount of live coral to plummet. This project seeks to address the degradation of coral reefs in three coastal villages—Le Morne, Poudre D'Or and Bambous Virieux. The project will farm resilient coral species in nurseries before transplanting them in degraded reefs. To ensure sustainability, it will also train communities on rehabilitation techniques and strengthen their awareness of reef conservation. Through this project and others like it, Mauritius can help create resilient coral reefs to sustain biodiversity, help protect beaches from erosion, and support the fisheries and tourism sectors. **Proponents:** Mauritius Oceanography Institute, Albion Fisheries Research Centre, National Coast Guard, and partners.



Map of Projects in Mauritius

MOZAMBIQUE

Recommended for funding by PSC

Seagrass Action Plan in Maputo and Inhambane Bays (1):

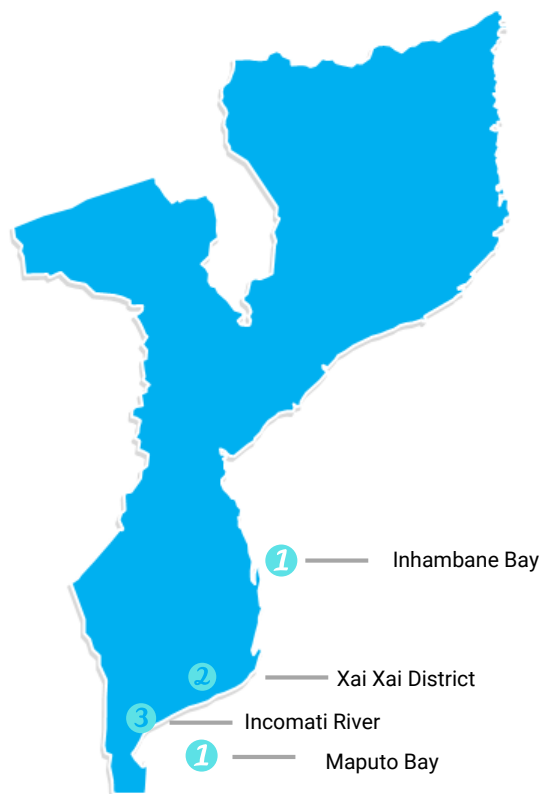
Despite the importance of seagrass to biodiversity and local livelihoods, floods, sedimentation, and destructive fishing have caused the number of seagrass beds in Maputo and Inhambane Bays to plunge, as highlighted by the project proponents. Harvesting of invertebrate foods (such as clams) in particular has led to a loss of biodiversity in seagrass. This project proposes developing a seagrass action plan that would collect ecological, economic, and social information on invertebrate fisheries and engage communities in seagrass restoration and conservation. Outcomes of the project would include a better understanding of the relationship between seagrass and invertebrate fisheries, a sustainability strategy for seagrass, and documentation of seagrass areas for restoration and their economic value. Given the similarities between seagrass patterns and threats between Mozambique and the wider Western Indian Ocean region, the proponents emphasize that the project's restoration and management methods could be replicated elsewhere. **Proponents:** Eduardo Mondlane University (UEM), Ocean Revolution Mozambique, KUWUKA -JDA, and partners.

Mangrove Restoration and Livelihood Support through Community Participation (2):

Mangroves provide nesting and breeding habitats for marine life, support fisheries, help maintain water quality, and slow erosion. However, the project proponents outline how deforestation, floods, and cyclones are decimating the mangrove forest in the Limpopo Estuary. This project aims to demonstrate how mangrove management could be improved in Xai Xai district through restoration projects, a community-based management system, and the generation of baseline information to support decision-making. The project will result in the designing of a community-led local management plan, the conducting of carbon inventories in mangrove stands, and enhanced management decision-making. **Proponents:** Center for Sustainable Development of Coastal Zones, Eduardo Mondlane University, National Institute of Fisheries Research, and partners.

Environmental Flows for enhanced Biodiversity and Poverty alleviation in the Incomati delta (3):

Mozambique is a 'downstream' country, with the catchments of most of its rivers, including the Incomati, located in neighboring countries. Over 50% of the environmental flow (Eflow)– i.e. the quantity, quality, and timing of water flow – to the lower Incomati area has been changed by activities, such as dam construction or irrigation, in upstream countries, causing a loss of ecosystem productivity in Mozambique's estuaries and deltas. This has an effect on the livelihoods of farmers, fishers, livestock keepers, and more in lower Incomati communities. In response, this project will conduct an environmental flows assessment in the river. They will map key habitats and the biodiversity values in the Lower Incomati; analyse the current flow pattern; assess ecosystem services; and develop Eflow scenarios; thereby helping to meet communities' needs downstream and alleviate poverty. **Proponents:** UEM, ARA-Sul, Institute of Research and Development, and partners.



Map of Projects in Mozambique

SEYCHELLES

Recommended for funding by PSC

Improving Water Quality by use of Constructed Wetland Wastewater Treatment at a Farm in the South of Mahé Island (1)

Animal wastes from farms, when released into the natural environment, can pollute water and impact human health. However, when properly treated, this same danger can actually become a resource for farms, as this project intends to demonstrate. It will treat wastewater from a piggery in the south of Mahé, then recycle the treated effluent and use the solid matter for making compost. The costs involved with this operation will be identified and data on reuse of treated effluent for improving crop yield shared with small-scale farmers so that they may replicate these methods.

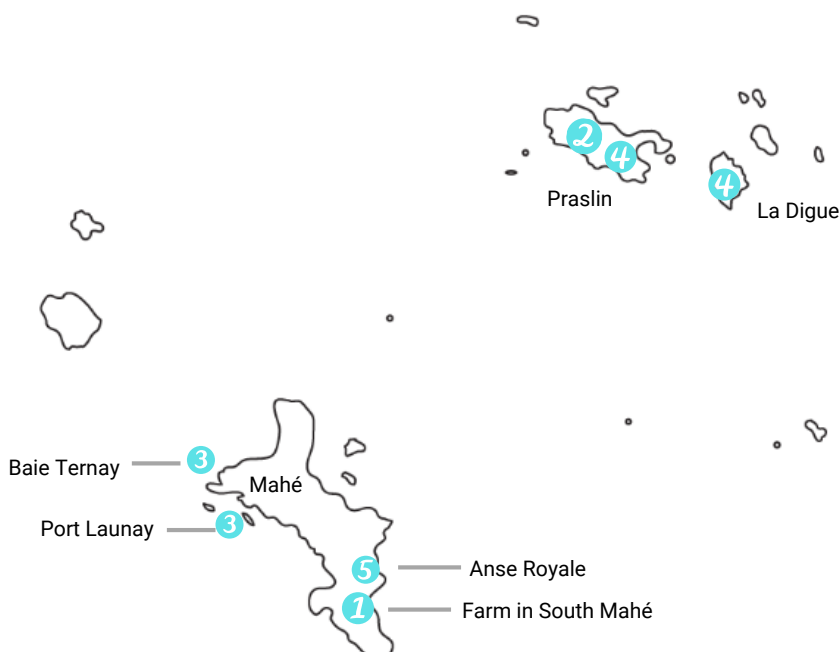
Proponents: Ministry of Environment, Energy, and Climate Change, Ministry of Agriculture and Fisheries, Seychelles Agricultural Agency, Public Health Authority, Public Health Laboratory, and partners.

90% of lowland wetlands in the Seychelles have been lost.

Community-based ecological coastal rehabilitation using an Ecosystem-based approach (2):

Wetlands prevent floods, clean waters, protect shorelines and recharge aquifers. They also provide havens for a wide variety of flora and fauna and offer a unique habitat for many rare and endangered species. Nevertheless, 90% of lowland wetlands in the Seychelles have been lost, according to the project proponents. The objective of this project is to demonstrate how rehabilitating fragmented wetlands in Pasquière, Praslin Island can reduce the impacts from land-based stresses onto critical habitats downstream. It will achieve this goal by working with community-based organizations and local governments to enhance vegetation cover upstream, remove invasive plant species encroaching on the wetlands and replant native species to reduce soil erosion. Rehabilitation of wetlands will allow the community to once more benefit from their unique ecological services. **Proponents:** Terrestrial Restoration Action Society of Seychelles (TRASS), Gaea Conservation Network Seychelles, Chinese Academy of Sciences, University of Seychelles, and partners.

Map of Projects in Seychelles





Seeking Funding

Assessing water quality in Marine Protected Areas (3):

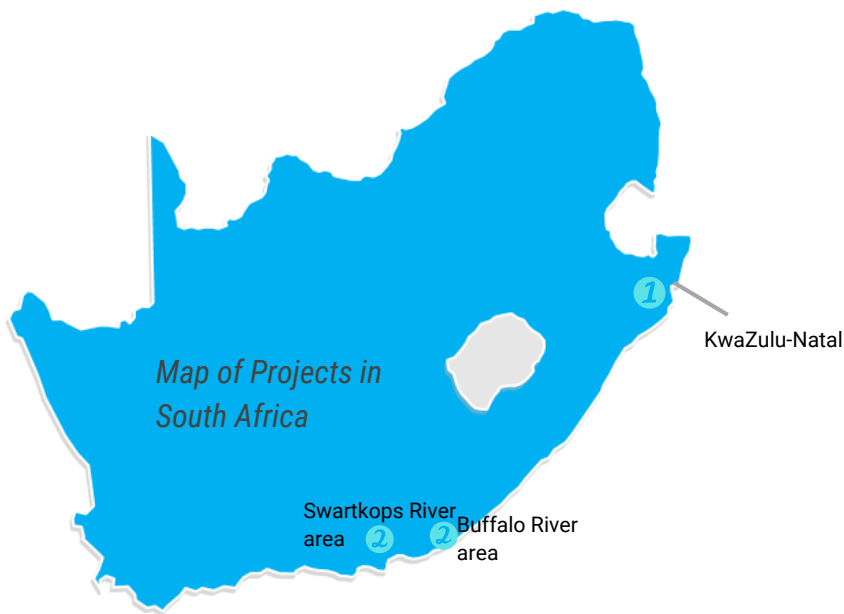
Two Marine Protected Areas (MPAs), Port Launay and Baie Ternay (both designated as Marine National Parks) are under increased stress from housing and tourism. The project proponents point to an increase in litter, macro-algae, and coral bleaching as major indications that water quality in the parks is under threat. The project will assess water quality and establish a baseline that will allow authorities to monitor ecosystem health and make informed management decisions. Upon the conclusion of the project, water quality in the parks will be quantified; the source of marine pollution identified; staff trained on water quality assessment; and the local community sensitized on the danger of inappropriate disposal of wastes. **Proponents:** Seychelles National Parks Authority and University of Seychelles.

Environmental Flow Assessments on Praslin and La Digue Islands (4):

According to the project proponents, too little research in the Seychelles has been conducted on freshwater and coastal aquatic ecosystems, despite their large role in sustaining biodiversity and economic services. However, these ecosystems are under threat from over-exploitation, pollution, deforestation, and other human activities. This project will demonstrate how environmental flow assessments on aquatic systems on Praslin and La Digue Islands can be used to identify threats and management needs. Establishing this baseline can then inform the development and implementation of national policies to protect these systems in Praslin, La Digue and beyond. The project will produce a national mini Stream Assessment Scoring System that can be used for long-term monitoring by the community. **Proponents:** Ministry of Environment, Energy and Climate Change, National Research Foundation-South African Institute for Aquatic Biodiversity, and University of Seychelles.

Water Quality Monitoring in water basins of Mahé Island (5):

Increasing economic growth in the Seychelles has led to a surge in demand for water. The proponents note that, as water shortages and restrictions during the dry season have become common, a process to better allocate, manage, and monitor water resources has become critical to avoid damaging the Seychellois economy and quality of life. This project aims to implement hydrological and water quality monitoring in two key water basins on the east (Anse Royale) and southwest (TBD) coasts of Mahé Island. These environmental flow assessments will help Seychelles determine the environmental, economic, and social trade-offs inherent to water allocation, as well as the management needs for implementing recommendations. **Proponents:** Ministry of Environment, Energy and Climate Change, Public Health Authority (PHA), the Public Health Laboratory, Public Utilities Corporation, and partners.



SOUTH AFRICA

Recommended for funding by PSC

Improvement of ecosystem health and water quality by implementing a Source to Sea based approach to tackle marine litter in five priority river systems in Durban, KwaZulu-Natal (1):

Marine litter—and its effects on marine life, beaches, and fisheries—has become a pressing issue for South Africa. The proponents underscore that the country has grown increasingly concerned about beach litter originating from river systems. The project will demonstrate how a 'Source to Sea' approach in five river systems in KwaZulu-Natal, can reduce litter generation and recover litter with river basin-wide interventions. Under the project, targeted rivers will be mapped, collection points for the community and private sector identified, and litter recovery and recycling initiatives launched. The interventions will be studied to evaluate how they can be applied to other South African coastal areas.

Proponents: Department of Environmental Affairs and partners.

Improvements in Marine Water Quality through enhanced Estuarine Management (2):

Estuaries, productive ecosystems with economic, aesthetic, and recreational value, are under increasing threat from upstream pollution in South Africa. This project seeks to ensure that marine water quality in the Swartkops and Buffalo River estuaries is “fit for use” for different users (marine aquaculture, seafood processing plants, recreational and tourism, and conservation).

The project plans to investigate the causes and impacts of impaired water quality in the estuaries so that it can develop or improve water quality indicators, standards and guidelines. The project will also improve capacity to reduce pollution at its source and monitor, collect, and analyze water quality data. South Africa's Department of Environmental Affairs (DEA) will use the lessons learnt from the project to improve coordination and monitoring elsewhere in the country. **Proponents:** Walter Sisulu University, Nelson Mandela University, DEA, Department of Water and Sanitation (DWS), Department of Agriculture Forestry and Fisheries (DAFF), Provincial Department of Environmental Affairs, and partners.



TANZANIA

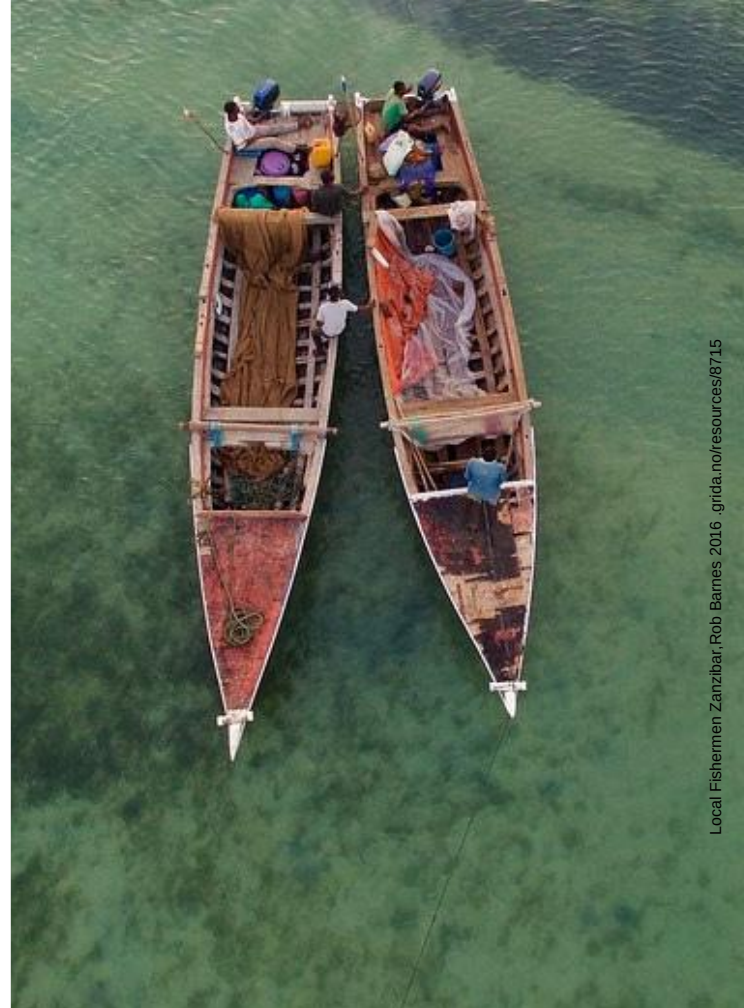
Recommended for funding by PSC

Sustainable Catchment Management through Enhanced Environmental Flow Assessment and Implementation (1):

Water resources in Tanzania are under pressure before due to competing demands and climate change. According to the project proponents, enhanced management of river catchments and basins is needed to reverse harmful changes to river and sediment flows, degradations in water quality, and negative impacts on marine and coastal ecosystems. This project aims to conduct Environmental Flow Assessments (EFAs) in pilot river catchments in the Rufiji Basin—a pollution hotspot area—and will evaluate the benefits provided by associated ecosystems. As a result of the project, stakeholders will have new resources and increased capacity to guide sustainable management of river flows. **Proponents:** National Environment Management Council, Sokoine University of Agriculture, Water Use Associations, and partners.

Designing Sustainable Community-based Mangrove Harvesting and Restoration Models in Rufiji Delta (2):

Mangroves in the Rufiji Delta—which hosts about 50% of the country's total mangrove cover — are under threat from traditional community dependence on the forest and governance issues related to community rights, access, and coordination, as underscored by the project proponents. Collaborative arrangements, including management planning and a restoration strategy, is therefore needed to safeguard the mangroves and the ecosystems they support. This project seeks to develop a sustainable, community-based harvesting and restoration model for the delta that will outline selective harvesting and permissible cut and rotation cycles. The project will also create two nurseries for community-led natural and artificial mangrove restoration activities. **Proponents:** Institute of Marine Sciences-University of Dar es Salaam, Tanzania Forest Service, Wetlands International Africa, Kibiti District Council, and partners.



Local Fishermen Zanzibar, Rob Barnes 2016. grida.no/resources/6715

Upscaling and Amplification of the Msingini Wastewater Treatment Facility Model in Chake Chake Town, Pemba (3):

Untreated effluents from cities and settlements, including raw sewage, have been discharged directly into the marine environment along the Zanzibar archipelago—impacting human and marine health and causing a decline in fish catches, according to a threat analysis by the project proponents. This project aims to demonstrate how the ecosystems near Chake Chake Town can be protected from the discharge of untreated municipal wastewater. It will provide additional wastewater drainage capacity for Chake Chake Town Council; enhance effluent reduction measures (ERM) of the existing Mtoni-Msingini Wastewater Treatment Unit; and increase the types of wastewater treatment tools through the construction of wetland systems. The wetland will reduce the pollution of the local marine and coastal environment while improving water quality and public health. **Proponents:** Zanzibar Environmental Management Authority, Chake Chake Municipality, Zanzibar Water Authority, and partners.

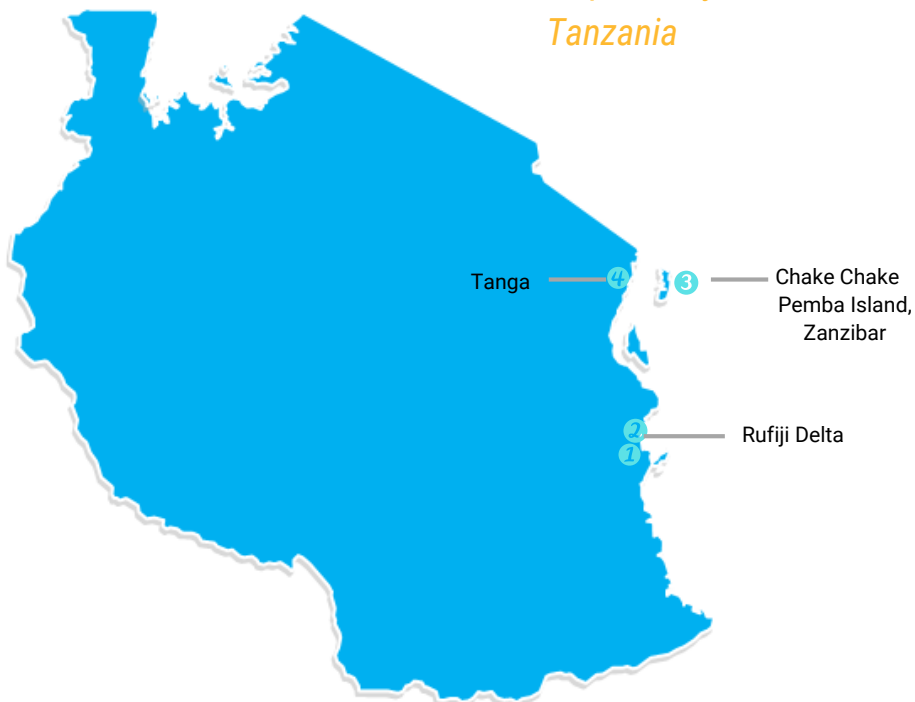
Rapid urbanization [in Tanga] and industrial development have led to the ocean becoming a receptor of all urban waste streams, both treated and untreated."

Recommended for full proposal development

Demonstrating and Implementing an Innovative, Appropriate, Cost Effective and Sustainable Municipal Wastewater Treatment Technologies in Tanga City (4):

The coastal and marine ecosystems of Tanga are important contributors to Tanzania's economy and biodiversity. Yet according to the project proponents, rapid urbanization and industrial development have led to the ocean becoming a receptor of all urban waste streams, both treated and untreated—threatening both public and environmental health. This project aims to show how the discharge of municipal wastewater, sewage sludge and fecal sludge from Tanga can be reduced through cost-effective and sustainable wastewater treatment technologies and monitoring water quality parameters. The project will promote its results to demonstrate how these technologies can be applied to other pollution hot spots in Tanzania. Proponents: University of Dar es Salaam, ENVICON, Dar es Salaam Water and Sanitation Authority, and partners.

Map of Projects in Tanzania



SECRETARIAT OF THE NAIROBI CONVENTION

United Nations Environment Programme
P.O. Box 30552 GPO 00100
Nairobi, Kenya
Tel: +254 20 7622025; 7623238
Email: unenvironment-nairobi-convention@un.org

