1- Economic values

Ocean Asset Value in the WIO - Shared Wealth Fund

Marine assets in the WIO provide considerable value and could provide even more if they are well managed.

$333.8 bn

WIO Gross Marine Product (GMP) is the ocean’s annual economic value.

20.7% Direct services enabled by the ocean

- 19.0% Marine tourism
- 0.8% Research & development
- 0.5% Security & control
- 0.2% Ocean survey
- 0.1% Crane industry
- 0.1% Education & training

70.2% Adjacent benefits of the ocean

- 50.0% Coastal tourism
- 14.0% Carbon sequestration
- 6.0% Coastal protection
- 2.2% Marine biotechnology

9.1% Direct output of the ocean

- 7.8% Industrial fisheries
- 1.2% Subsistence fisheries
- 0.1% Aquaculture / mariculture

Mangroves, Coral Reefs, Seafood, Fishers, Tourism operators — they’re all connected.

Across the WIO, peoples’ livelihoods and income are often inextricably linked to healthy functional ecosystems. When these are damaged, all pay the price.

Primary Assets

- Marine Fisheries: $135.1 bn
- Mangroves: $42.7 bn
- Coral Reefs: $18.1 bn
- Seagrass: $20.8 bn

Adjacent Assets

- Productive Coastline: $93.2 bn
- Carbon Absorption: $24.0 bn
FIGURE 2  STATE OF MARINE ASSETS IN THE WESTERN INDIAN OCEAN (WIO)

RAPIDLY EXPANDING POPULATION

Approximately 60 million people live within 100 km of the coast across the entire WIO, building stress on natural resources.

CORAL REEFS AT RISK

71-100% of reefs are at risk in all WIO countries except for Seychelles.

Fish stock decline

35% of the stocks assessed in the WIO are fully exploited.

28% are overexploited.

Rapid increases in population and consumption levels – coupled with high reliance on coastal and marine resources for sustenance and livelihoods – are the key drivers of overexploitation and degradation of Western Indian Ocean coastal ecosystems.

SHRINKING MANGROVES

- 18% Tanzania (1980-2015)
- 27% Kenya (1985-2010)

LACK OF PROTECTION

Only 2.4% of marine area is under some form of protection in the WIO.

YELLOWFIN ON THE WANE

The yellowfin tuna stock in the WIO is in danger of collapse within a few years if no action is taken.

SOURCES: Oluma et al. (in review); FAO (2015); IOTC (2015); UNEP-Nairobi Convention and WCWASA (2015), WCWPA (2016); WRF (2011)
People, Climate and Ecosystems

- Nature-based solutions (NBS) are solutions that are inspired and supported by nature, and can provide environmental, social and economic benefits for urban resilience and sustainability with locally adapted, resource-efficient and systemic interventions.
- Nature-based solutions (NbS) to climate change currently have considerable political traction. Nature-based interventions are most often shown to be as effective or more so than alternative interventions for addressing climate impacts.
- Planning for and implementing multifunctional nature-based solutions can improve urban ecosystems’ adaptation to climate change, foster urban resilience, and enable social and environmental innovation.
- Addressing urban challenges with nature-based approaches can improve and protect ecosystem services.
- A sustainable approach to shoreline management demands a balance between protection of property and preservation of coastal ecosystem services.
Tools

Spaceborne L-Band Synthetic Aperture Radar Data for Geoscientific Analyses in Coastal Land Applications: A Review (https://doi.org/10.3390/rs12142228)

Question on **coastal and marine ecosystem mapping**

- Why do we need to better understand the foundation of ecosystems in urban, rural and protected areas?
- What is the relationship between ecosystem and coastal resilience?
- What are the critical needs for ecosystem mapping in the African context?
- What are the observational services (intelligence/usable information) we need to close the gap in ecosystem mapping for coastal resilience?
- What is the process for designing ecosystem mapping services?