



*Mitigating fisheries impacts on
critical habitats in the SWIO region
Fisheries*

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Mitigating fisheries impacts on critical habitats in the SWIO region Fisheries

- *Fishing practices* in the WIO that area causing degradation or destruction of critical habitats (directly and indirectly, e.g. through trophic impacts)
- *Measures and techniques* to mitigate fisheries impacts on critical habitats with examples from the region, key success factors, challenges, highlighting collaboration between fisheries and habitat conservation actors
- *Future priorities* and types of fisheries-environment *inter-sectoral/agency collaboration* needed to mitigate fisheries impacts on critical habitats

Value of Fisheries in the in the WIO

An estimated 60 million people live within 100 km of the coast in the wider WIO region and many of them rely on the sea for their economic, social and cultural security (van der Elst and others, 2005)

The economic value of marine fisheries in the WIO is estimated to be around US\$1.9 billion annually (Obura et al., 2017b)

A large proportion of these people rely on fish for food and economy

Examples:

- About 80 per cent of Mozambicans live in rural areas, and 50 % of them rely on fish for their main protein source,
- Seychelles process fish products, responsible for about 95% of domestic exports
- Fisheries contribute a significantly to food security and economies of all SWIO countries

Global guiding principles

- Code of Conduct for Responsible Fisheries (FAO 1995): all riparian states in the SWIO region subscribe to code of conduct. Their ability to comply with it and to introduce effective measures to ensure long-term sustainability is compromised by economic and sociopolitical realities
- The code is implemented through the Ecosystem Approach to Fisheries (EAF) adopted by Committee on Fisheries in 2003 – combining fisheries and environment
- Sustainable Development Goals (SDG 14.4): By 2020, effectively regulate harvesting and *end* overfishing, IUU fishing and *destructive fishing practices* and implement *science-based management plans*, in order to restore fish stocks in the shortest time feasible, at least to levels that *can produce maximum sustainable yield* as determined by their biological characteristics

Fisheries practices and environmental impacts

- Marine capture fisheries in the SW Indian Ocean are typically structured into *artisanal fisheries* (traditional/or small scale commercial fisheries) and *industrial fisheries* (or semi-industrial) that operate further from the coast using ocean-going fishing vessels
- All fishing practices have a potential to cause environmental degradation or destruction of critical habitats depending the way they are used as well as the effort applied
- Environmental degradation comes in several distinct forms
 - 1) Indirectly: Ecosystem functioning and loss of biodiversity: change in tropic functioning and productivity
 - 2) Directly: Though habitat degradation and loss (coral reefs, seagrass beds, mangroves, estuaries)
- Fishing practices regarded as destructive in the SWIO region: shallow water trawl, beach seines, spear guns, purse seines (ring-nets), monofilament/reef seines, dynamite fishing,

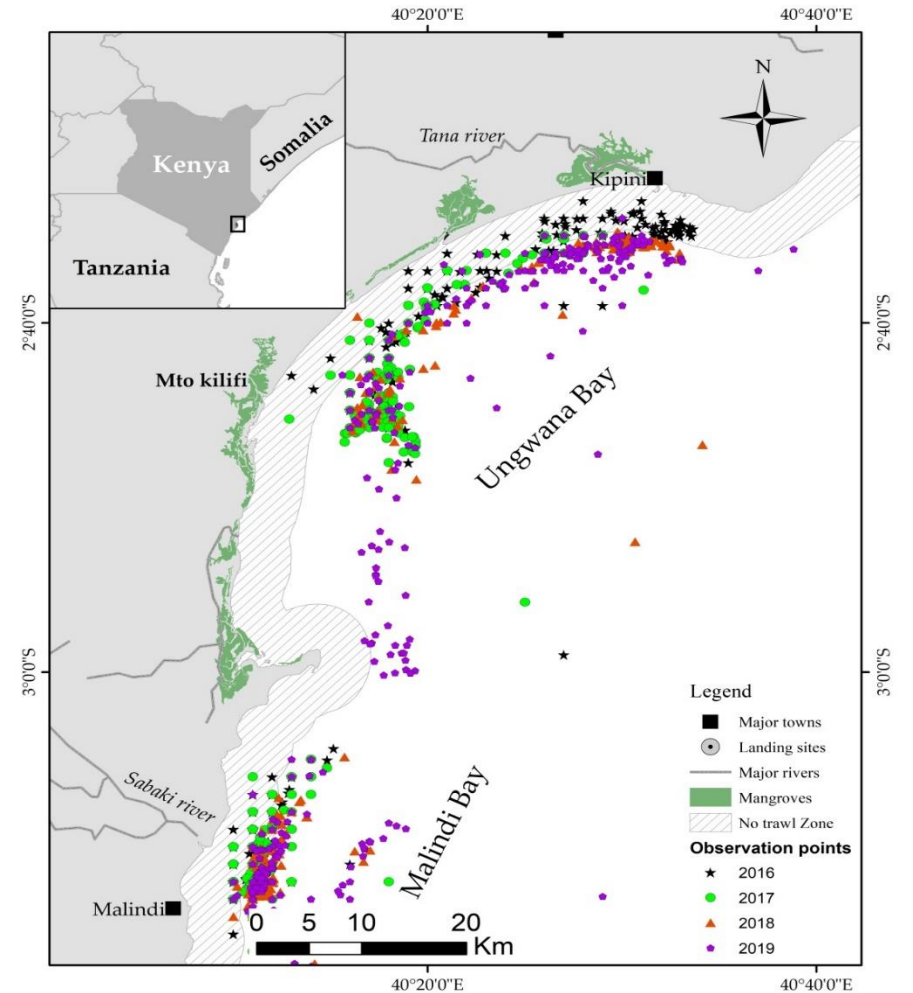


	Shallow water trawl	Beach seining
Occurrence in SWIO states		
	Somalia	Somalia
	Kenya	Kenya
	Tanzania	Tanzania
	Mozambique	Mozambique
	South Africa	South Africa
		Madagascar
		Mauritius
		Seychelles
Environmental impacts	High proportion of juvenile in catches	High proportion of juvenile in the catches
	Physical damage to sea bottom	Physical damage to reefs and seagrass habitats
	Benthos mortality	
	Large by-catch	
	Sediment re-suspension	
	ETP species	



Prawn trawl management

- Suspension of trawling (Kenya 2005-2010, Tanzania ?)
- Development of management plans or co-management plan
- Kenya: Malindi-Ungwana bay prawn fishery management plan (2010)
 - TAC maximum 400 tones
 - controlled effort, 4 vessels
 - restricted fishing zone, 3nm offshore
 - gear modification to reduce ETPs (mandatory use of TED) -
 - Total utilization - no discard at sea - environment
 - shared benefits – through BMU provided with part of the by-catch
 - scientific monitoring including mandatory observers – no fully implemented due to lack of capacity
 - annual evaluation - happens
 - review after 5 years – needs review to EAF



Mitigation and management of beach seine

- *Total ban*: Beach seine fisheries are banned in several countries Kenya (Fisheries Act, 2010), Tanzania (Fisheries Regulations, 2009), Madagascar(?)
- *Restriction of fishing effort* – licenses (South Africa, Mauritius, Seychelles)
- *Mesh size regulations* - South Africa: Mauritius 44-mm in the West Coast and the Southern and Eastern Cape coasts and 14 mm on the KwaZulu-Natal coast and in Mozambique: 34mm which was increased to less than 120m since 1994, us minimum 9cm
- Seasonal or area closures -



Subsidies and gear exchange

Name of program /locality/period	What was provided	Success/Impact	Challenges
<ul style="list-style-type: none"> • Kiunga National Marine Reserve 2003-2011 • Nyali-Bamburi-Utange (2003-2008, • Mwaepe Fishers groups 2003-2007 	<ul style="list-style-type: none"> • Alternative gears (gill nets, longline, hand lines) • Fishing vessels • Development of land sites • Cold storage-freezers, coolers 	<ul style="list-style-type: none"> • Reduced number of beach seines • Reduced juvenile in fish landings • Improved catches 	<ul style="list-style-type: none"> • Low rate loan repayment • Higher incidents of sea turtle catches • Poor monitoring • Poor management

Despite all this efforts the beach seine fishing continues to be a threat to fisheries and marine environment in the region

Challenges

- Development of management plans/regulations is often a lengthy and rigorous – regulations become non-adaptive to changes
- Lack of sustained enforcement of regulations
- Capacity: application of EAF tools particularly in small scale fisheries, capacity in monitoring and documenting the state of fisheries and environment

Future priorities

- Improved cooperation between environment and fisheries management, within state and non state actors to enhance implementation of global and national targets for resource conservation goals
- Support to marine community conservation and community managed areas through capacity building
- Improvement of communication between science and policy makers and fishing community

*Thank you
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