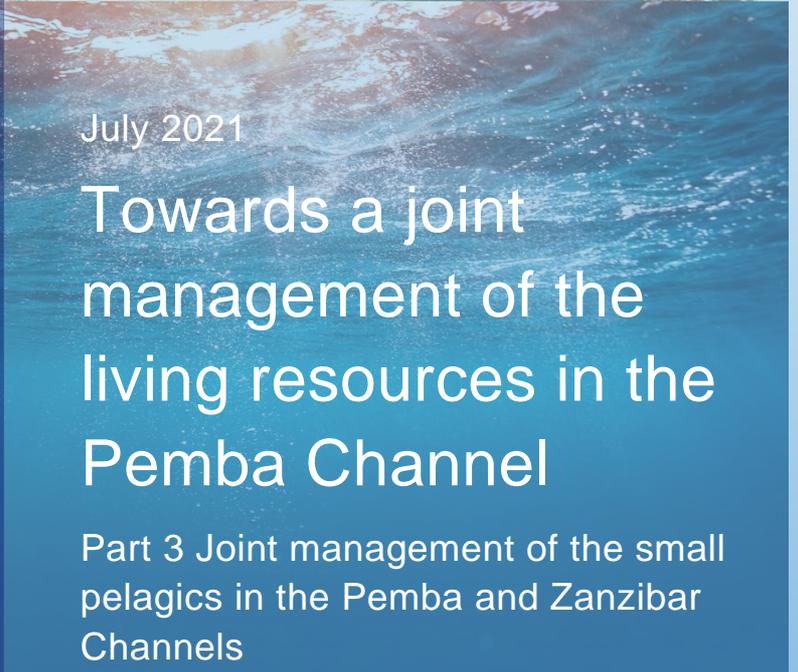
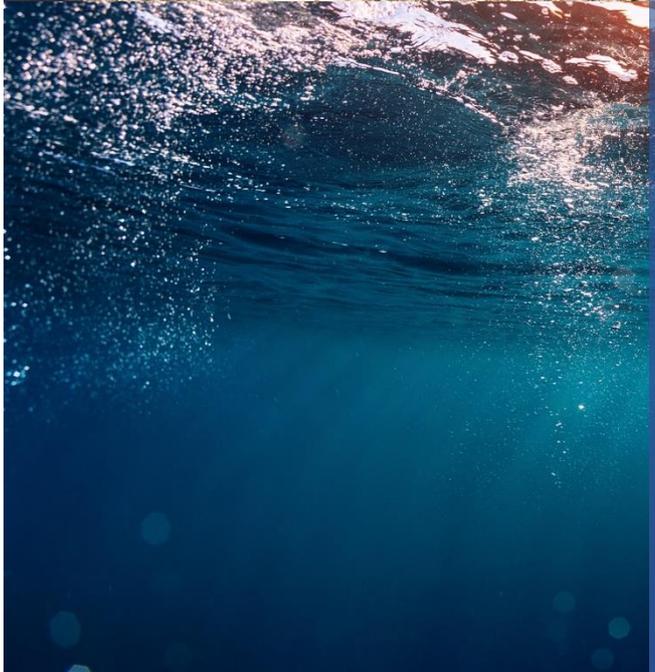




# SOLSTICE

SAPPHIRE PROJECT



July 2021

## Towards a joint management of the living resources in the Pemba Channel

Part 3 Joint management of the small pelagics in the Pemba and Zanzibar Channels



### Towards a joint management of the living resources in the Pemba Channel

#### Joint management of the small pelagics in the Pemba and Zanzibar Channels<sup>1</sup>

#### Key Messages:

Small pelagic fish on both sides of Pemba and Zanzibar Channels are influenced by the same oceanographic processes and climatic drivers thus they should be included in any collaborative management arrangements

Small pelagic fish in the Pemba and Zanzibar Channels are shared resources that need to be managed jointly to ensure their sustainable use.

A step-wise approach should be adopted in establishing joint collaborative management arrangements, beginning with those that do not need legislative changes, such as harmonization of catch data collecting systems, data management, and establishment of a joint monitoring programme of oceanographic parameters.

#### Overview

Small pelagic fish species, also known as 'Dagaa' in Swahili, are straddling in nature as they are widely distributed over territorial and internal waters of both mainland Tanzania and Zanzibar, and particularly within the Mafia, Zanzibar and Pemba Channels. The Zanzibar and Pemba Channels are part of the territorial waters of both mainland Tanzania and Zanzibar, and their fisheries (including small pelagics) are managed separately by different fisheries policies and laws overseen by the Ministries of Livestock and Fisheries Development (MLFD) for mainland Tanzania and Blue Economy and Fisheries for Zanzibar, respectively. There is currently no institutional framework to enable joint stock management of small pelagics. *New research findings support joint management of small pelagic fisheries in the Pemba and Zanzibar Channels.*

#### Socio-economic importance of the small pelagic fisheries

The marine fishery sector is essential for the growth of coastal economies in both mainland Tanzania and Zanzibar, with small pelagic fisheries being a significant component of the sector, especially in terms of job opportunities. In recent years, the Democratic Republic of Congo (DRC), Zambia, Rwanda, Burundi and Malawi have emerged as major regional export markets for processed marine small pelagics. A study in Zanzibar found that 80% of processed fish was sold to agents exporting fish to the DRC. In terms of nutrition, marine small pelagic fisheries constitute a major source of protein for coastal communities, especially for low-income rural households. Recently, urban populations have increased their

<sup>1</sup> This SUMMARY is one of the three documents produced under a series 'Towards a joint management of the living resources in the Pemba Channel'. The other two documents are: Part 1: Oceanographic underpinning and Part 2: climate change impacts on Tanzania's marine ecosystems.

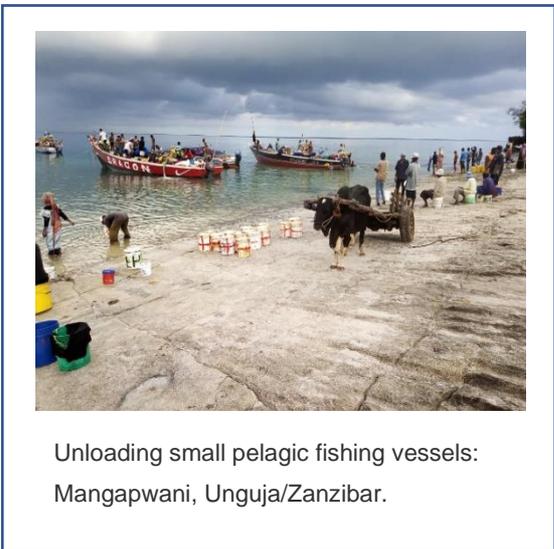
consumption of small pelagic fish due to reductions in demersal and reef fisheries catches and rapid population growth.

### Small pelagics as a shared resource

There are many indications that stocks of small pelagics in the Pemba and Zanzibar Channels are shared. According to recent scientific research, the Pemba and Zanzibar Channels are unified systems, with similar environmental mechanisms affecting both the mainland and the island sides. While primary production and hence fish stocks in the Pemba Channel are influenced by deep-ocean upwelling processes, the situation is different in the shallower Zanzibar Channel which is influenced by both riverine inputs and oceanic inflows.

Fishers seeking small pelagics in the Pemba and Zanzibar Channels mostly utilize the same fishing grounds, employ the same types of vessels and gears, and therefore capture the

same species. Furthermore, the small pelagic fishery is characterized by a significant seasonal migration between



Unloading small pelagic fishing vessels:  
Mangapwani, Unguja/Zanzibar.

### Key management challenges

Several studies have identified multiple challenges facing the management of small pelagic species including:

- the need to improve current statistical approaches and the research base of the fishery;
- managing uncertainty related to the level of exploitation of the fishery;
- the need to harmonize fishing regulations and management approaches between the mainland and Zanzibar;
- the need to reduce conflicts around migrant fishers, and low compliance with licensing and registration initiatives.

mainland Tanzania and Zanzibar, particularly between Pemba and Tanga, which is typically driven by the monsoon winds.

### Fisheries Governance in the Pemba and Zanzibar Channels

The small pelagic fishery in Tanzania is shared by the country's two political and administrative divisions, mainland Tanzania and Zanzibar. However, the fisheries sector is a non-union matter, with two ministries managing fisheries resources independently, each with its own legislative and institutional framework, policies, laws, rules and departments. Furthermore, the responsible Ministries for fisheries management for both mainland Tanzania and Zanzibar independently developed management plans for small and medium pelagic fish species in 2012 and 2019, respectively. Both the mainland Tanzanian and Zanzibari legislative and administrative frameworks seek to ensure sustainable management of fishery resources in their respective jurisdictions.



Small pelagic fishing vessel auctioning catch at Kasera landing site, Tanga Municipality

## Recommendations for collaborative management approaches

- Cooperation between institutions managing small pelagics on both sides of the Union would provide mutual benefits
- According to the Zanzibar Small and Medium Pelagic Fisheries Management Plan, a combined mechanism or task force between Zanzibar and mainland Tanzania is needed to manage shared resources, guarantee regulatory consistency and plan execution (e.g. shared license information).
- Collaboration could start by coordinating catch data collection, shared monitoring of oceanic factors like Sea Surface Temperatures and Chlorophyll-*a*, and coordinating fishing operations to assess resource productivity.
- Mitigation measures for present and future climate change effects should be included in Fisheries Management Plans.



Small pelagics sun-drying: Mkokotoni, Unguja/Zanzibar

### The information presented in this brief is based on the following open access publications:

B. Sekadende et al., 2021. **The small pelagic fishery of the Pemba Channel, Tanzania: what we know and what we need to know for management under climate change.**, Ocean Coast Manag., 197 (2020), p. 105322. <https://doi.org/10.1016/j.ocecoaman.2020.105322>

Y. Shaghude et al., **Seasonal variations of remotely-sensed Chl-*a* and associated physical conditions in the Tanzanian channels.** Ocean Coast Manag., under review.

Breuil, C. and Bodiguel, C. 2015. Report of the Meeting on the Small Marine Pelagic Fishery in the United Republic of Tanzania. Report/Rapport: SFFAO/2015/34. August/Août 2015. IOC-SmartFish Programme of the Indian Ocean Commission. FAO. Ebene, Mauritius. 90pp. <http://www.fao.org/publications/card/en/c/e0108213-4101-4aa1-b285-62f0a47049d1/>



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