

## **Driving forces behind the exploitation of Sea Urchin Predators in the WIO**

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### **Abstract**

Globally, alterations of marine food webs due to overfishing of species at high trophic levels are leading to unpredictable changes in coastal ecosystems. In parts of the Western Indian Ocean, increasing abundances of sea urchins (particularly *Tripneustes gratilla*) have been observed. Sea urchins' grazing intensity on seagrass beds is generally proportional to urchin abundance. Loss of top-down control due to overfishing of urchin predators is thought to be one factor behind overgrazing in the region. Overgrazing could lead to extensive seagrass loss and have far-reaching impacts on the coastal environment and for local communities. The focus of this interview study lies on the exploitation of sea urchin predator fish species, ecological awareness and local ecological knowledge among fishers, and the development of management strategies towards more resilient social-ecological seagrass ecosystems in Mombasa, Kenya and Uguja Island, Zanzibar. The majority of the fishermen fish on seagrass beds and corals, and mentioned urchin populations as increasing. More than 70% of Mombasa's fishermen mentioned decreasing catch trends, indicating a high fishing pressure. All 8 investigated urchin predator species are fished regularly, even hardly sellable non-target species like triggerfish. The triggerfish *Balistapus undulatus* is a sea urchin keystone predator, and its top position in the food chain makes it vulnerable to exploitation. The development of long-term management strategies is crucial for present and future livelihood sustenance for local people.