

Assessment and mitigation of marine megafauna catch in southwestern Indian Ocean fisheries

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Long-lived marine megafauna (elasmobranchs, marine mammals and turtles) are highly vulnerable to anthropogenic mortalities. Meanwhile there is a general lack of information to allow status assessment of most species. These species groups include upper trophic level predators, mesopredators and grazers, which can significantly affect the structure and function of coastal ecosystems, including primary production and carbon sequestration. Moreover, these species provide ecosystem services in terms of income and sustenance for fishing communities and tourism-based livelihoods. Fisheries are one of the main threats to megafauna at the global scale, including in the southwestern Indian Ocean (SWIO). Information on the magnitude of incidental (bycatch) and targeted catch is lacking, particularly in the largely undocumented and unregulated small-scale fisheries which dominate the WIO region. The MASMA funded BY-Catch Assessment and Mitigation in Western Indian Ocean Fisheries (BYCAM) project (2015-2017) has undertaken research to assess targeted and non-target megafauna catch in the SWIO, with the aim of developing realistic mitigation measures and recommendations for improving governance and management strategies across the region. Here we present a summary of the results from the different BYCAM project components including: assessment of the current effort in SWIO small-scale fisheries; assessment of megafauna catch using landings observers at 21 sites in Kenya, Madagascar and Zanzibar; life history and ecology of selected elasmobranch species; assessment of the effectiveness of Turtle Excluder Devices in prawn trawls (Kenya, Tanzania and Mozambique); development and trials of low-cost methods to reduce catch of dolphins in gillnet fisheries (Zanzibar and Kenya); assessment of the socio-economy and the governance structure of small-scale fisheries in the SWIO. The results from BYCAM provide the first regional assessment of megafauna catch in the SWIO

and the methods developed facilitate for future conservation and management of these species.