Assessing marine megafauna captures in small-scale fisheries of the southwestern Indian Ocean: combining questionnaire, landing site and on-board observer survey data

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Large long-lived marine megafauna (elasmobranchs, marine mammals and turtles) are highly vulnerable to non-natural mortalities. As predators, mesopredators and mega-herbivores, they may serve a significant role in the structure and function of coastal ecosystems. Furthermore, megafauna are critical for a number of coastal communities in both consumptive (fisheries income and subsistence) and non-consumptive (marine tourism) capacities. Fisheries catch remains one of the main threats to these species at the global scale, including in the southwestern Indian Ocean (SWIO). The magnitude of targeted and incidental fisheries catch have been extensively investigated in most industrial fisheries but remain poorly understood out with these, particularly those in the largely undocumented and unregulated small-scale fisheries, which dominate the SWIO region. As part of the WIOMSA MASMA funded BYCAM project, landings data were collected for these megafauna species over the course of 12 months (beginning July 2016) across 21 sites in Kenya, Zanzibar and northern Madagascar. Sites were selected based on existing data regarding gear and vessel composition, geographical coverage and logistical constraints. Information from landing sites is complimented with questionnaire surveys, and on-board observer effort in case-study fisheries. Here we present the results of this study and discuss the implications for management and the future of those species affected. Results suggest a high complementarity of data sources, but highlight the importance of transdisciplinary approaches to assess the magnitude of marine megafauna catch in small-scale fisheries in the WIO region. Data collected also highlight species specific catch hotspots that will require further investigation and attention for management. The results of this study provide valuable information for megafauna status assessment and for management of small scale fisheries in the WIO.