Characterization Of The Reef-associated Elasmobranchs Fishery In Tanzania Mainland

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Background
Tanzania coral-reef elasmobranchs constitute an important component of artisanal fisheries catches recorded on landing sites. Little information exists on Elasmobranchii distribution as well as their ecology in Tanzania. This study was carried out to profile reef-associated elasmobranchs brought on landing sites found in Dar es Salaam, Kilwa, and Tanga regions, to characterize catch composition for elasmobranchs in the selected hotspot landing sites in Tanzania mainland, to estimate the diversity and abundance of the landed elasmobranchs in Tanzania mainland and to determine growth, sex ratios, and condition factor for elasmobranchs at the selected hotspot landing sites.

Method
This study was designed as a cross-sectional landing site survey using a non-probability sampling from artisanal fisheries from three districts of Kilwa (Kivinje and Masoko landing sites), Kinondoni (Kunduchi landing site), and Tanga (Sahare landing site), from January to July 2020 at specific landing sites in three regions along Tanzania mainland coastline. Fishermen were interviewed using a questionnaire. The data for assessing reef fish size structure were collected by measuring and recording the fork length and weight of fishes. Fork length measurements were done using the standard fish measuring board to the nearest cm. Total body weight was taken using a weighing scale to the nearest grams. To understand the diversity of reef fishes, the fish species were counted and recorded, and the identification of fish species was done using a field guidebook. The counts were used to calculate the Shannon-Wiener diversity index.

Results
Results showed that about 391 individuals, composed of sharks (n=60) and rays (n=331) were recorded during this study. More elasmobranchs were landed at the Kivinje landing site, followed by Sahare landing site and the Kunduchi landing site. The catches were dominated by small and medium-sized (cm) sharks and whiprays all caught by using hooks and shark nets fishing gears. The capture species belonged to four families of Dasyatidae, Myliobatidae, Sphyrnidae, and Carcharhinidae. For rays, the Jenkinsii whip ray (H. jenkinsii) was the most often caught species with an average landing weight of 164 ± 61 g-1 (SD) representing 33% of the ray landings, followed by the blue-spotted ribbon tail stingray (T. lymma) constituted 30% of the ray landings and
the leopard whip ray (H. leoparda) with total landing weight of 250 ± 77 g⁻¹ (SD) representing 26% of the ray landings. For sharks, the oceanic whitetip shark (C. longimanus) was the most abundant species in the catch followed by the blacktip reef shark (C. melanopterus).

Conclusion
A total of eight species were known to constitute catches. Rays were the most dominant numbers and species. When compared to standard sizes, catch composed of Small and medium-sized (cm/weight) fish species. We recommend that key stakeholders in the fisheries sector should consider the proper management of sharks and rays for a suitable economy and livelihood in Tanzania.