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Present status of frigate tuna (*Auxis thazard*) fishery in Dodanduwa, Sri Lanka

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Abstract

Small-scale fishery plays a key role in annual fish production in Sri Lanka. Ring net fishery in Dodanduwa area mainly targets the large school of frigate tuna (*Auxis thazard*). The present study includes (a) studying the present status of the frigate tuna considering the length-weight relationship and condition factor, (b) identifying the management strategies of fishing in the Dodanduwa area through a socioeconomic survey, and (c) studying the environmental variability in fishing grounds. Year-round fishing activity and high fishing effort are the main characteristics of this fishery. A positive allometric growth in frigate tuna revealed that the fish lived in good condition and showed healthy development. Monthly mean values of Sea Surface Temperature (SST) - 27.83 ºC and Sea Surface Chlorophyll Concentration (SSCC) - 1.41 mg/m^3 indicated that they were at optimum levels for *A. thazard*, inhabiting the south-west coast of Sri Lanka. The main reason for the maximum yield of fish from June to July within the southwest monsoon period is the prevalence of the optimum environmental conditions for *A. thazard* inhabiting the southwest coast of Sri Lanka. SST were 26.8 ºC, 27.6 ºC, and 29.1 ºC from June to August 2023, respectively. SSCC was higher in June (1.864 mg/m^3) and July (1.864 mg/m^3) than August 2023 (0.5 mg/m^3). The study revealed that frigate tuna fishing was the primary income source of the fisher community. Most of the fishers earn 1000-5000 LKR daily. Poor income management impedes the growth of the economic status of the fishers. Middle-aged fishers dominate fishing, with less attraction from the younger generation. The study affirms that a community-based management approach would assist in achieving a sustainable fishery in the study area.

Keywords

Ring-net fishery, length-weight relationship, relative condition factor, socio-economic survey