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Oral Presentation

Efficiency of co-management in a small West African fishing harbor: the case of a tiny no-take zone

Bocar Sabaly BALDÉ^{a, *}, Patrice BREHMER^{a, b, c, *}, Ndiaga THIAM^a, Saliou FAYE^a,
Adama MBAYE^a, Modou THIAM^a

^a Institut Sénégalais de Recherche Agricole (ISRA), Centre de Recherche Océanographique de Dakar-Thiaroye (CRODT), BP , Centre PRH, Dakar, Sénégal

^b IRD, Univ Brest, CNRS, Ifremer, Lemar, SRFC, CSRP, BP 1386, Dakar, Sénégal

^c Sub Regional Fisheries Commission, SRFC, CSRP, Dakar, Sénégal

* Corresponding authors: bocarbalde2005@hotmail.com and Patrice.Brehmer@ird.fr

Abstract

To cope with the scarcity of fishery resources and loss of marine and coastal biodiversity in Senegal, local communities have set up, among other things, no-take zone (ZIP), by integrating scientific knowledge. These ZIPs function to conserve the biological and cultural diversity of the coastal zone, rebuild fish stocks, and enhance the livelihoods of local populations. Here, we provide an example of an initiative of co-management that is inexpensive and involved fishermen in one ZIP. First, an oxygen sensor and Doppler current profiler were deployed to monitor dissolved oxygen levels and local sea currents, respectively. Second, 12 scientific fishing operations, combining pelagic and demersal sampling, were carried out. Third, a questionnaire was developed to ascertain the opinions and knowledge of fishermen on local co-management. Large thermal amplitude and oxygen concentrations were recorded, respectively (17–30 °C and 1.5–7.75 mg l⁻¹). The total abundance of fish was higher in the ZIP compared to surrounding areas. *Epinephelus aeneus* (Serranidae) and *Dactylopterus volitans* (Dactylopteridae) were the most abundant species inside (28%) and outside the ZIP (22 %), respectively. Local fishermen perceived that ZIP co-management had mixed success, stating a lack of information and unfair access of the harbor fishermen to the ZIP. None of the fisherman associated climate change with the decline in catches, but an increase in the number of Senegalese industrial fishing boats. The local fishermen mostly believe that the establishment of artificial reefs positively enhances local capture rates. ZIP, marine protected areas, and co-management are increasingly gaining support towards the marine conservation of countries in West Africa, with the current study demonstrating the contribution of fishermen to collaborate in committees with administrative agencies and researchers for sustainable use.

Keywords: Coastal conservation, multidisciplinary, knowledge exchange, co-management, Sustainability, Senegal.