



Session 02

The contribution of small scale fishing constraints on *Sardinella* landings in Senegalese waters

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Abstract

Over the last decades, small pelagic fisheries have shown an increasing development in Senegal, especially those targeting *Sardinella aurita* and *S. maderensis*. Their landing and fishing effort quickly increase for both species, from less than 100,000 tons with 35,035 trips in the early 80's to a peak of over 400,000 tons with 86,427 trips in 2008. The Senegalese small scale pelagic fisheries, targeting both species, accounts for more than 86% of the artisanal fishery landing in biomass. We investigated the effects of small scale fishing over ten years (2004-2013) with generalized additive model fitting techniques using landings vs. fishing effort per gear and type of fishing gears in the Northern and southern parts of Senegal. The study revealed that these effects are more pronounced in the Northern area for *S. aurita* while they are more significant in the Southern area for *S. maderensis*. The purse seine, i.e the main Senegalese fishing gear targeting *Sardinella*, provides the most significant effects on *S. aurita* landings in both areas, while for *S. maderensis*, the most significant effects are shared between two fishing gears: purse seine in the Northern area and encircling gill nets in the Southern area. Spatio-temporal patterns of the effects of small scale fishing are described and the relative importance of fishing effort and fishing gear on both species at seasonal and inter-annual scales are discussed.

Keywords: effects of fishing; generalized additive model; *Sardinella aurita*; *Sardinella maderensis*; purse seine, encircling gill nets, Senegal.



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