Perceptions of rule-breaking related to marine ecosystem health.

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Abstract

Finding effective solutions to manage marine resources is high on political and conservation agendas worldwide. This is made more urgent by the rate of increase in the human population and concomitant resource pressures in coastal areas. This paper links empirical socio-economic data about perceptions of marine resource health to the breaking of marine management rules, using fisheries as a case study. The relationship between perceived rule-breaking (non-compliance with regulations controlling fishing) and perceived health of inshore marine environments was investigated through face-to-face interviews with 299 heads of households in three Tanzanian coastal communities in November and December 2011. Awareness of rules controlling fishing activity was high among all respondents. Fishers were able to describe more specific rules controlling fishing practices than non-fishers ($t=3.5$, $df=297$, $p<0.01$). Perceived breaking of fishing regulations was reported by nearly half of all respondents, saying “some” (32% of responses) or “most” (15% of responses) people break fishing rules. Ordinal regression modelling revealed a significant linkage ($z=-3.44$, $p<0.001$) in the relationship between respondents' perceptions of deteriorating marine health and their perception of increased rule-breaking. In this paper, inferences from an empirical study are used to identify and argue the potential for using perceptions of ecosystem health and level of rule-breaking as a means to guide management measures. When considering different management options (e.g. Marine Protected Areas), policy makers are advised to take account of and utilise likely egoistic or altruistic decision-making factors used by fishers to determine their marine activities

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