

Title: **Skipjack, yellowfin and bigeye tuna allocation within a game theoretic framework**

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Abstract: Collaborative management is essential in fisheries with multiple users, where different fishing groups compete to exploit a shared stock, often using unsustainable practices. This is the case in the Coral Triangle, an ecosystem increasingly coveted by conservation organizations for its high biodiversity, and heavily exploited by fishing groups from the six main countries with exclusive fishing access to the majority of its area: Indonesia, the Philippines, Malaysia, Papua New Guinea, Timor Leste and Solomon Islands. This paper proposes to address the possibility for collaborative management through the application of game theory to skipjack, yellowfin and bigeye tuna fisheries in the Coral Triangle. The member countries of the Coral Triangle target skipjack tuna, however there are high incidences of juvenile yellowfin and bigeye tuna bycatch. Adult yellowfin and bigeye are targeted by countries outside the Coral Triangle, and thus there is a very obvious conflict of interest between the two groups that needs to be explored. This paper will look at whether current exploitation of tuna stocks in the Coral Triangle is operating under a cooperative or a noncooperative equilibrium, and investigate what type of compensation (perhaps in the form of a side payment) could be offered to Coral Triangle countries to discourage bycatch of juvenile yellowfin and bigeye tuna.