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The economics of high seas protection

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The increasing exploitation of fish on the high seas has caused concern among natural and social scientists for years (e.g. High Seas Task Force, 2006; Sumaila et al. 2007). The fisheries exploiting the high seas have been associated with by-catch of threatened species and habitat destruction (Norse et al., 2012). Many commercially important, highly migratory pelagic species commonly targeted by high-seas fisheries are also at risk. Stocks of many tunas are either fully or overexploited. Importantly, fishing by high-seas fleets can influence the availability of fish to coastal fleets because many 'high-seas' species are straddling stocks, i.e., they spend time in coastal country waters during part of their life (Block et al., 2011). Hence, mismanaging the high seas can have far-ranging repercussions.

The above picture of fishing in the high seas raises the question: should we protect the high seas from fishing or not? When economists are confronted with such a question, they turn the question around and ask - if we protect the high seas what will we gain and what will we lose? In other words, what are the costs and benefits of protecting the high seas?

Arguments for closing the high seas are many. First, high seas fish stocks are vulnerable (e.g., deep sea stocks such as orange roughy; and highly migratory stocks such as tuna). Second, fisheries management in the high seas is difficult because these resources remain global commons. Third, attempts to achieve sustainable management of high seas fisheries have mainly been through Regional Fisheries Management Organizations, the performance of which are, at best, mixed (Cullis-Suzuki and Pauly 2010). Given the current ineffective management of high seas fishery resources, it is only appropriate to challenge the notion of the freedom of the seas (Russ and Zeller, 2003). This can be done by closing the high seas or portions thereof, by providing access rights to the fishery resources, or both. This paper focuses on the costs and benefits of implementing the former.

Sumaila et al. (2007) found that closing the high seas or portions thereof to fishing is likely to result in relatively little loss, in the short term, in annual landed values and profits. This finding was backed by more recent papers (Rogers et al. 2014; White and Costello 2014; Sumaila et al. 2015). On the other hand, the potential benefits from doing so could be substantial by securing insurance against the loss of important high seas fish stocks such as tunas, while protecting many market and non-market values for the benefit of both current and future generations of people. Using a spatial bioeconomic model, White and Costello (2014) concluded

that closing the high seas to fishing would result in a win-win-win outcome in which fish biomass, catch and profits would all increase. Further analysis of fisheries data indicates that catches in coastal waters could surpass current global levels if the high seas is closed to fishing. These finding have led to a call to turn the high seas into a "fish bank" for the world, where fish can grow without the threat of being caught and then "seed" the fished areas within country waters (Sumaila et al. 2015).

Thinking of $C0_2$ emissions and climate change, restricting fisheries activities to coastal waters becomes even more economically and environmentally sensible (Cheung et al. 2017; Roberts et al. 2017). Currently, 6 high seas fishing nations capture 77% per cent of landed value of high seas caught fish (Sala et al. 2018). This study further suggests that fishing at the current scale is possible only because large government subsidies and cheap labour stemming from modern slavery (Tickler et al. 2018). Hence, without subsidies up to 54% of the present high-seas fishing grounds would be unprofitable. This result supports an earlier finding that many bottom trawlers operating in the high and deep seas would not be profitable without subsidies (Sumaila et al. 2007). Calculation of the Gini coefficient (an economic indicator of income inequality) shows that the inequality that currently exist in the distribution of high seas fisheries benefits among coastal countries would decrease by 50% with closure of the high seas (Sumaila et al. 2015). This adds one more "win" to high seas protection, i.e., reducing the current inequality in the distribution of high seas fisheries revenues among coastal countries.

A major obstacle to protecting the high seas is that different nations and fisheries will face different costs and benefits. The key issue for countries that are already active on the high seas is the loss they will incur if the high seas are protected. Another way to look at this is that these countries have been benefiting from a global common for many years and therefore they should take responsibility in fixing the problem. A second major challenge for the proposal is that the short-term annual losses may appear too large for many nations compared to the long-term future benefits. The well-known problem of 'instant gratification', in economic terms commonly known as 'discounting', may stand in the way of a proposal that is likely to serve humankind well (Sumaila & Walters 2005).

Although protecting the high seas from fishing may be controversial, the history of UNCLOS suggests that collective action can benefit the current generation, and maintain high seas resources for the benefit of future generations too. Current scientific information indicates that by forgoing a relatively small fraction of current global marine fisheries catch, in the short term, by closing all or portions of the high seas to fishing, the global community may secure some insurance against extinctions and the loss of marine diversity in the high seas, while protecting many market and non-market values for the benefit of both current and future generations.

This crucial message from science should be at the forefront of the agenda as UN Delegates look forward to a new date for the fourth BBNJ treaty negotiations, once this is determined by the UN General Assembly.

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