



Trading on conservation: A marine protected area as an ecological fix



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A B S T R A C T

Many developing countries have encouraged the expansion of mechanised fishing in order to engage in the lucrative export of seafood. This has caused a rise in the incidental mortality of marine wildlife. In recent years, widespread concern over wildlife deaths has been used by developed consumer countries to insist on mitigation measures or to impose economic sanctions. Hence, many supplier countries have been forced to implement wildlife conservation measures to safeguard their export-driven marine fisheries. In this paper, we present an account of how the Gahirmatha Marine Sanctuary, an iconic Marine Protected Area in eastern India, was created in such a context. We suggest that it serves as an ecological fix, i.e. a token spatial solution that removes environmental barriers to the accumulation of capital, and we describe how a combination of neoliberal actors has maintained it for more than two decades so as to greenwash subsequent industrialisation along the coast. Finally, we describe its social and ecological repercussions to highlight the contrast between ground realities and the win–win discourse that accompanies such efforts to integrate conservation with capitalistic production.

1. Introduction

Over the past five decades, seafood has become one of the most important commodities in international trade and many developing countries have emerged as significant suppliers to the major markets represented by the European Union, Japan and the United States of America [1]. This is particularly true of the global shrimp trade where the supply is dominated by Asian countries such as China, India, Indonesia, Malaysia, Viet Nam and Thailand [2]. In India, the state played a pivotal role from the 1960s onwards in promoting shrimp exports to foreign markets because it could earn valuable foreign exchange. This was done under the rubric of ‘modernisation’ of fisheries and different forms of financial support were offered to promote the use of trawling vessels and facilitate their access to rich fishing grounds. For many years, this combination of state subsidies and the strong demand for seafood resulted in exponential profits [3,4]. However, this intensification has gradually led to a reduction in the resource base with the result that trawl fishers have had to periodically either intensify operations in the same location or expand to other locations in order to avoid economic losses [5,6,7,8].

A second attendant problem is that if these fishing grounds are important habitats for non-target species such as turtles and dolphins, there is a high probability that these species will accidentally be caught and killed as bycatch. For instance in many tropical countries, the best shrimping grounds are found in nearshore waters which are also important breeding habitats for wildlife such as the olive ridley turtles

(*Lepidochelys olivacea*). In these cases fishing poses a major threat to wildlife populations because with the expansion or intensification of effort, the ‘externalities’ (in the form of high incidental mortality of wildlife) keep mounting. This can give rise to intense public opposition on environmental grounds and cause a crisis of legitimacy for such extraction-based industries even within free-trade institutions such as the General Agreements on Tariff and Trade (GATT). For instance, controversy shadowed the United States’ yellowfin tuna fisheries for more than four decades because large numbers of dolphins got killed as bycatch each year. Under pressure from conservationists, the US government enforced mitigation measures on its own fleets and imposed economic embargoes on some supplier countries such as Belize, Panama and Venezuela because their fishing practices contributed to high dolphin mortality rates. This forced other supplier countries to take decisive action to reduce the proportion of wildlife caught as bycatch in order to safeguard their trading interest [9,10,11]. Therefore, seafood-exporting countries are particularly vulnerable to conservation-related economic pressure and their governments have to find ways of protecting both wildlife and export-oriented fisheries.

One common mitigation measure involves the installation of bycatch reduction devices in fishing nets so that non-target species can escape. Another is the imposition of closed seasons or temporal bans on fishing. But often, in the case of charismatic wildlife, conservationists tend to advocate the establishment of closed areas in the form of no-take Marine Protected Areas (MPAs) [12,13,14,15,16]. Such closures impose permanent spatial restrictions on direct resource

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extraction, in this case mechanised fishing, and are therefore believed to remove areas from the reach of industrial production. They seem to be ‘set aside’ from the larger political economy of the region although they often remain linked to it in less overt ways [17]. Building on this, the current paper suggests that while such set asides may serve as wildlife refugia they are actually more important for the role they play in enabling resource exploitation to continue in the surrounding landscape, that is their practical function is secondary to their discursive value. The concept of ‘ecological fix’ is used here, to explain this type of relation between a no-take MPA and the regional political economy.

2. The ecological fix

Given the vast and sometimes divergent literature on the topic of fixes, the outline presented here will be confined to a few pivotal works which have contributed to developing the concept of an ecological fix. It first originated in the idea of the *spatial fix* proposed by Harvey [5] who evoked multiple meanings of the term to analyse the many ways in which the production of space was central to the functioning of capitalism. However he primarily used the concept ‘to describe capitalism’s insatiable drive to resolve its inner crisis tendencies by geographical expansion and geographical restructuring.’ As Jessop [18] later clarified, one way to define a spatial fix is as ‘an improvised temporary solution, based on spatial reorganisation and/or spatial strategies, to specific crisis-tendencies in capitalism.’ The context that they focussed on was the crisis caused by over-accumulation of capital but what is relevant to our discussion here is that as both scholars emphasised, the use of the term fix denotes the improvised, short-term nature of the response to a chronic problem caused by the capitalistic mode of production. To simplify, a spatial fix can be understood as a makeshift geographic solution to a mainstream economic crisis.

In the context of industrial fishing, as mentioned earlier, unaddressed environmental problems can lead to an economic crisis directly in the form of loss of profitability, as well as more indirectly by causing a loss of legitimacy - the degraded resource base and public reaction to the environmental costs become barriers to growth and accumulation. Therefore, to sustain growth-led development, the state has to intervene and find ways of offsetting the associated environmental costs. It has to find an *environmental fix* - that is a makeshift environmental solution to the problems caused by the capitalistic mode of production. This is especially true of states with a neoliberal orientation because of their explicit support for industrial development and free trade [19]. They have to play a contradictory role because on the one hand they are committed to promoting industrial development but on the other, they have to solve a mounting environmental problem that if left unaddressed, can lead to a major economic crisis [20]. These neoliberal attempts can take a bewildering assortment of forms that do not always involve the reorganisation of space and that sometimes involve the creation of altogether new commodities from parts of nature that previously had no market value [5,21]. Hence to retain analytical clarity here, this work borrows from Jessop and Bakker [21,22] to define the term ‘ecological fix’ as a spatial strategy that serves to screen or partially solve an environmental problem that can become a barrier to industrial growth. Therefore, its value lies more in its political-economic function (i.e. its discursive contribution) rather than in its ability to actually protect or conserve some aspect of nature.

This paper presents a case study of a high-profile MPA in eastern India, the Gahirmatha Marine Sanctuary, to illustrate how a no-take MPA was first created as an ecological fix for trawl fisheries in the region. Then it traces how the MPA has been used by other actors to physically and discursively constrain conservation efforts and enable industries to freely access the rest of the coast. It also presents the main ecological and social outcomes of such an MPA to depict the contrast between the ‘win-win’ discourse accompanying this strategy and the ground-level implications. Finally, it emphasises that such case studies

underscore the urgent need for conservationists to be attentive to the role MPAs actually play, rather than endorsing them uncritically, because these spaces tend to obscure the effects of industrialised extraction on wildlife in the larger landscape and worsen socio-economic inequalities within the fisheries sector.

3. Methods

The first author followed multi-sited ethnographic methods [23,24,25] to study the political ecology of olive ridley conservation in Odisha from 2012 to 2015 and herein, a subset of these interviews and field notes has been used. Potential respondents were identified using a combination of published literature and snowball sampling. All of them were provided with a brief overview of the study either in writing or over the phone (according to their preference) and if they agreed to participate, semi-structured interviews were conducted in person by the first author. The respondents comprised retired and serving officials of the Odisha Forest (8) and Fisheries’ Departments (2), fisheries activists and leaders (4), members of trawl owners’ associations (4), port authorities (3) and biologists (5). Since most were social elites, the trajectory, location and duration of the interviews was respondent-driven [26,27] and they lasted from 10 min to little over an hour. If required, select topics were revisited on a subsequent date.

Detailed running notes were taken and in addition, most interviews were recorded using a digital voice recorder (with the permission of the respondent) and transcribed completely. Inductive coding was used to identify the main themes for analysis. In addition, textual material was used from a range of sources, including technical reports, scientific papers, newsletters and newspaper articles to complete the information gleaned from interviews and observation [28].

4. Fisheries modernisation in India

The modernisation of marine fisheries began in India in the 1960s and one of its main goals was to improve the supply of seafood to a large overseas market. In particular, catching shrimp for export was so profitable that it was referred to as pink gold and from the early days, it attracted investments from firms and individual capitalists [29]. Over the next two decades, state support for shrimping led to the exponential growth of trawling fleets in several parts of the Indian peninsula including Odisha (earlier Orissa) on the east coast ([30] and references therein [31]). But this led to violent clashes with small-scale fishers in several parts of the country because they were first marginalised by the state policies and later physically displaced by the trawl fishers as shrimp was found in the nearshore waters that were the traditional fishing grounds of this sector. Finally in the 1980s, small-scale fishers collectivised to form the National Fishworkers’ Forum (NFF) to campaign for their rights [4: 143–169] [32]. The NFF organised a series of agitations in the subsequent years which forced the state to pass a few laws to safeguard small-scale fishing: for example, the Orissa Marine Fishing Regulation Act (OMFRA) passed in 1982 reserves the nearshore waters (up to 5 km from the coast) for non-mechanised artisanal craft. In 1991 the first national Coastal Regulation Zone (CRZ) Notification was passed to curb the unplanned and illegal industrialisation that was displacing entire fishing villages (www.nffindia.org).

The same year, as part of the national drive to liberalize trade, the Indian state began to promote export-oriented joint fishery ventures between foreign and Indian firms within its Exclusive Economic Zone, mainly in deep waters. This met with enormous resistance from Indian fishers and their internal differences were temporarily buried to fight this ‘invasion’ [33,4]. Finally in 1996, following the report of a state-led enquiry commission, all joint venture licenses were cancelled. The report also recommended that one of the state agencies should take explicit charge of enforcing the zoned fishing rules for small-scale, mechanised, and deep sea vessels because tensions between these groups remained [34]. Overall, by the 1990s, the marine fisheries

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