

Frenemies: Marine Turtle Conservation and Economic Development in the Rushikulya Coast, Eastern India

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Abstract

The discourse on biodiversity conservation often presents this domain as an antithesis to economic development. However, in practice, the relation between conservation and development is far more complex because conservationists possess limited powers and must give serious consideration to the economic aspirations of others in any given region, such as local communities and industries. Moreover, conservationists are themselves a heterogeneous group with diverse ways of working. Therefore, although the relation between conservation and development is often described in binary terms such as conflict—co-operation, this does not adequately capture the nuances and dilemmas of actual conservation practice. In this article, I present an ethnographic study of marine turtle conservation in Rushikulya (eastern India), to argue that the relation between the two domains is essentially ambivalent and uncertain and hence, best understood as one of being ‘frenemies’ i.e. friendly enemies, rather than as allies or antagonists. From fieldwork conducted over three years (2012–2015), I describe how actors in both domains opportunistically borrow tools and concepts from each other, which blurs the boundaries between them and results in both connections and contestations. To conclude, I suggest we need more ethnographic studies to understand the realities of practice and provoke reflection on current approaches to both conservation and development.

Keywords

Biodiversity conservation, conservation practice, coastal development, political ecology, India

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The Rushikulya coast of Odisha in eastern India is an important conservation site for a migratory species of marine turtle, the olive ridley (*Lepidochelys olivacea*). In the winter months, thousands of ridleys congregate here to mate and nest. However, this is not a formally protected area and is part of an inhabited and industrializing region. Moreover, conservation programmes here have largely followed a participatory approach and tried to address the livelihood concerns of local communities. Hence, Rushikulya represents a mixed landscape, one in which conservation and development¹ overlap and intersect with each other.

In this article, I provide an ethnographic account of how the ideas and improvisations of a variety of actors—including but not limited to different types of conservation practitioners—shape conservation practice and its engagement with notions of development. Taking a political ecology approach, I pay close attention to issues of power to argue that conservation and development in such landscapes share a peculiarly fragile, ambivalent relation that I characterize as ‘being frenemies’ (a frenemy is a ‘a person who combines the characteristics of a friend and an enemy’; Oxford English Dictionary, 2019). I suggest that the term sharpens our understanding of the role and effect of compromises (Li, 1999) and helps us move beyond binary categorizations of the conservation–development relation such as conflict–cooperation, governance–resistance and marginalization–hegemony. It captures the fact that, often, none of the actors involved has complete knowledge or control over events, and despite the benefit of hindsight, many tensions and questions may remain unresolved. Or, they may become recurring problems because the solutions, such as they may be, are useful only for a limited time or location. The idea of ‘being frenemies’ also speaks to a fluid and productive conceptualization of power (Foucault, 2002) where conservation and development intersect and power can (and does) shift between actors within and across the two domains, giving rise to the characteristic frenemy combination of hostile and genial connections. I suggest that such attempts to diversify our understanding of the relations between conservation and development are important for knowledge-building in the Global South because many biodiverse areas are both well populated and the focus of development projects of various scales (Huang et al., 2011; Lowe, 2006; Sundar, 2014; West & Kale, 2015).

In the next section, I outline how the relation between conservation and development has altered with time. Then I describe how studies conducted with an ethnographic sensibility have diversified our understanding of conservation practice in mixed landscapes. I follow this up with a short description of my own approach to the study of marine turtle conservation in Rushikulya and the economic context in which it was embedded. I proceed to trace the actors and practices associated with the conservation programme, as well as some of the enduring tensions and lacunae in the ‘solutions’ proposed. I conclude with a reflection on how mainstream conservation ideology and narratives have in fact hampered the progress of conservation practice and contributed to its uneasy articulation with development. In conclusion, I suggest it is vital for practitioners to critically reflect on their work and share their experiential knowledge with a wide audience.

Conservation and Development

Biodiversity conservation began primarily as an effort to protect nature from the degradation caused by industrialization (Adams, 1997). Its advocates often describe it as the ‘antithesis’ to development and believe that it acts as a bulwark against the perils posed by modern economic activities. However, conservationists rarely exercise unilateral power and their choices are circumscribed by their social and economic settings. In the Global South especially, they tend to have very limited influence and access to resources. Moreover, over time, conservationists have come to support small-scale economic activities which are necessary for communities to sustain themselves (such as community-based ecotourism), as opposed to large-scale ones that cause serious environmental damage (such as mining).

Another factor that complicates conservation’s relation to development is that there is a significant internal divide between discourse and practice—formal conservation discourse is set by scientists trained in epistemologies of the Global North, predominantly in biology and allied fields, whereas conservation practice is a more mixed arena and can include villagers who are experts in alternative knowledge systems, activists who can spearhead campaigns and mobilize large groups of people, bureaucrats with formal administrative powers to manage natural resources, and so on.

Over time, biologists have realized that their studies, which earlier constituted the bulk of the literature, answer only a part of the question of how best to conserve biodiversity. Whereas, to understand what is often termed ‘real-world’ conservation and make sense of why such programmes almost never proceed the way they are envisioned, biologists need meticulous accounts of conservation practice that do not gloss over difficulties and failures. For instance, in an editorial in the flagship journal *Conservation Biology*, Kent Redford and Andrew Taber (2000, p. 1568) noted: ‘Writing experiences down and sharing them with others is a fundamental part of doing conservation—not just the successes but the failures as well, maybe even particularly the failures’. Around the same period, conservation began to attract large numbers of social scientists because as these programmes increased in scale, they became sites of multiple meanings and contestations over power, identity, equity and justice (Brosius, 2006; Peterson et al., 2010; Sundar, 2014). Their studies have added considerable nuance and diversity to accounts of conservation. However, much remains to be done. For instance, as recently as 2018, the Society for Conservation Biology launched a new journal titled *Conservation Science and Practice*. One of its main aims is to publish studies ‘that will inform the research and practitioner communities of knowledge gaps and research advances, as well as share experiences and lessons learned on how conservation partnerships succeed or fail’ (Schwartz et al., 2018, p. 1). Further, the editors make several explicit commitments to help practitioners contribute to scholarly literature on conservation, such as to publish ‘any well-documented work irrespective of whether it is globally relevant or novel’ and to publish ‘manuscripts that report on negative, unintended, or unexpected results’ (Schwartz et al., 2018). It is evident that the dearth of material that reflects practitioners’ voices and the true range of their experiences continues to be a burning issue for

conservation, and simultaneously for development, and this is one of the key gaps that I address in the current article.

Some Complexities of Conservation Practice

While the process of encounter between local communities and conservationists set against a backdrop of burgeoning development interests and identity politics continues to attract intense anthropological scrutiny (Buscher, 2013; Cepek, 2012; Jalais, 2010), there have been comparatively fewer studies on conservation practitioners per se and how their own views and actions have affected the course of programmes. In fact, in a recent essay, Laur Kiik (2019, p. 395) observes, ‘Too often, only the native people’s side of the conservation encounter gets personalised, humanised, and represented within nuanced stories—while the outside-arrived conservationists remain abstract, homogenous, and faceless representatives of global ideological regimes and dominant powers’. To correct this imbalance, he urges us to pay more attention to who exactly is a part of ‘the conservation community’ and the differences within it, so that we can unpack how individual actors, their affiliations and challenges lead to certain approaches being adopted over others. In fact, an earlier study by Celia Lowe on biodiversity conservation in the Togeian Islands of Indonesia (Lowe, 2006) describes some of these very aspects in detail. She describes the diversity of perspectives within the Indonesian community of biologists and how these result in diverse framings and methods of ‘doing conservation’. Lowe finds that since conservation programmes here bring together biologists and the nomadic Sama community, they become a hybrid of different cultural ways of relating to nature.

A second theme with which ethnographically informed studies frequently engage is that of unexpected or contrary outcomes. For instance, in their multinational study of how people get excluded from land, one of the aspects Hall et al. (2011) delve into is how forest conservation efforts, no matter how well-intentioned, eventually displace some group of people from access to land and land-based resources. They describe how forest conservation brings together governments, communities, international donors, NGOs and others. Yet it creates contested terrain and causes fractures within local communities even when coupled with promises of economic improvement, because all conservation programmes impose some restrictions on resource use. Therefore, Hall et al. (2011) suggest that wherever conservationist ideas are pervasive, there is ‘ambient exclusion’, although an increasing number of actors and institutions may subscribe to conservation and development discourses on ‘integration’ and ‘the common good’. Although their study does not examine conservation practice per se, it is apparent that in such situations, the terms and scales at which some people may lose access to land will depend to a large extent on how conservation practitioners understand and implement programme mandates.

In an account that explains how the Crater Mountain Wildlife Management Area (CMWMA) was created in Papua New Guinea and why it eventually failed, West and Kale (2015) go a step further in observing that conservation often

actively appropriates the discourse of economic development when it tries to build community support. It promises to help local people set up businesses that will monetize some aspect of nature and thereby improve their living conditions—in fact, they term this ‘conservation-as-development’. In the case of CMWMA, such promises created high expectations in local communities, and as these snowballed over these years, conservation NGOs fell further and further behind in delivery. Hence, when a mining company promised the same type of socio-economic benefits in exchange for access to survey their ancestral lands, these communities saw no contradiction in agreeing to cooperate with the them. Moreover, they felt frustrated and angry when they were told that mining operations had been delayed because of some conditions put forward by the conservation NGOs. This led to a violent attack on a researcher from one of the NGOs, and within a year the NGOs closed all conservation programmes in CMWMA. Therefore, if we evaluate these conservation programmes in the light of their stated objectives, especially with respect to their promise of economic development, we could term them as failures. However, as West and Kale note, a beneficial legacy of these conservation organizations was that they had trained a cadre of students from the University of Papua New Guinea to become scientists who were capable of leading national NGOs or occupying key positions in government institutions. Although this was not one of the main programme objectives, here the articulation of conservation with social (rather than purely economic) development resulted in a positive connection.

In a related vein, some studies have analysed how programmes may gain or lose support on a more restricted scale based on whether conservationists were flexible about the practices they employed or not. These direct our attention beyond the programme objectives or rationality per se, to its processual dimensions. For instance, Mahanty’s (2002) study of an ecodevelopment project in Nagarhole describes how junior staff of the Forest Department attempted to align with their hierarchical organizational culture by accepting targets set by their superiors but simultaneously tried to incorporate some features that reflected local concerns. This willingness to compromise eventually helped them ensure a certain level of compliance—if not whole-hearted participation—from the local community. This was necessary in order to meet the donor’s (the World Bank) expectation that a ‘successful’ project would result in a certain number of village-level ecodevelopment plans, drawn up in consultation with the community. In an illustration of the reverse scenario, Chhatre and Saberwal (2005) emphasize that the conservationists’ reluctance to engage in dialogue and negotiate with ‘the opposition’ (which ranged from resource-dependent villagers to elected representatives and social activists, over a period of 20 years) undermined efforts to protect the biodiversity of the Great Himalayan National Park. Similar to the Nagarhole case, a detailed study of on-the-ground conservation in the Kumbhalgarh Wildlife Sanctuary (Robbins et al., 2009) suggests that although informal (or illegal) use of forest resources is discouraged (or prohibited) by conservation institutions, such behaviours are prevalent and viewed as instances of practical problem-solving by both forest users and field staff of the Forest Department. While these accommodations are often referred to as ‘corrupt’ or ‘inefficient’

practices in many studies, they tend to be based on the considerable cultural and ecological knowledge of both parties and help to dilute the more draconian aspects of conservation policies. Consequently, they mitigate some of the socio-economic difficulties faced by marginalized communities living in these landscapes (Robbins et al., 2009).

The above-mentioned challenges are common to any attempt at governance that involves multiple actors and hence, the messiness holds true for development programmes as well (Li, 1999). Nevertheless, as Tania Li observes (1999, p. 298): 'It is less important that plans and discourses prevail than that they engage, providing room for manoeuvre and opportunities for compromise, with all the nuances of that term'. Further, some 'failures' are anticipated well in advance by implementors, and their efforts to contain these or paper over the cracks provide important space for others to demand that compromises be made on the ground, regardless of the official discourse and direction (Li, 1999). While many of these strategies are a part of the standard repertoire of conservation practice, as mentioned earlier, they have not received sufficient academic attention. This background forms a major impetus for the current article.

Methodology

This article is based on a multi-sited ethnographic fieldwork I conducted across Odisha during the 'turtle season' (i.e., from December to April) between 2012 and 2015 as part of a larger study on the politics of conservation (Ramesh, 2018). A multi-sited ethnography, in contrast to the classical approach which entails long-term immersion in a particular site, offers the possibility of understanding the dynamic associations between actors and sites because the researcher is not constrained by an a priori notion of 'the field' (Gupta & Ferguson, 1997). Although one begins with a rough working idea, it gives the researcher the flexibility to redefine the boundaries as required during the course of the study (Marcus, 1995). This becomes important and necessary while studying 'live issues' or intersecting domains, or if key actors are geographically dispersed. In this article, I draw on interviews conducted in Rushikulya beach, Ganjam, Gopalpur, Bhubaneswar, Cuttack, and Bengaluru and notes from participant observations conducted on the Rushikulya beach, although my understanding of turtle conservation in Odisha is also informed by fieldwork conducted in other sites (Ramesh, 2018).

The interviews were conducted with broadly two categories of respondents, conservationists and development actors. I was introduced to many of them by referrals from colleagues from the Indian Institute of Science (IISc) and the Dakshin Foundation—both institutions have been involved in fostering participatory conservation of olive ridleys in Rushikulya for over a decade. Their assistance also enabled me to conduct participant observation on different conservation activities, both on-shore and off-shore. The first group of respondents, the conservationists, consisted of formally trained biologists (including a few from IISc and Dakshin), heads of NGOs (mostly local), villagers who work in conservation projects and members of the Forest Department (both active and

retired). The second comprised fishers, office bearers of fishing unions, fisheries researchers who were familiar with conservation-related conflicts, managers of industries and officials of the fisheries department (both active and retired). Either detailed notes were taken during interviews, or they were recorded if the respondent granted permission. All interviews were transcribed in full. Inductive codes were used to identify the main themes from the transcripts, observation notes and related documents (Ramesh, 2018). Where names are mentioned, I have used pseudonyms to maintain confidentiality.

Iterative reflections on the interview transcripts combined with notes on participant observations were valuable in helping me understand the difference between purely scholarly versus practitioner-driven understandings of conservation, which, to put it simplistically, is the difference between how conservation is written about versus how it is carried out.

The Economic Context of Turtle Conservation

The Government of Odisha has consistently equated development with economic growth. Therefore, it has favoured the expansion of industries and allied infrastructure (Government of Orissa, 2001). For instance, in 2003, the government's Port Policy proposed the upgradation or construction of 13 ports along the 480-km coastline to connect the hinterland with export markets. Efforts are also being made to map and exploit offshore resources such as coal and petroleum (Wildlife Institute of India, 2011). Apart from this, marine fisheries have always been an important sector. Due to topographical variation, the northern and southern parts of Odisha support different types of fisheries. The former (Balasore to Jagatsinghpur district) has a broad continental shelf that extends up to 120 km, with large riverine deltas and distinct tidal effect. It supports mainly intertidal and demersal fisheries such as those of hilsa and pomfret. The southern part (Jagatsinghpur to Ganjam district), which includes the Rushikulya area, has a narrower shelf that extends up to 40 km with large sandy beaches. It supports fishing of pelagic species such as sardines and mackerels (Salagrama, 2006; Tietze, 1984). At the time of this study, the Odisha coast supported both small-scale fisheries that mostly supplied domestic markets and gillnetting and trawling that supplied high-value seafood such as shrimp to international markets.

Despite intense economic activity, this coast is also famous for the breeding congregations of the olive ridley. Odisha hosts two of the eight known mass-nesting (or *arribada*) sites of this species, at Gahirmatha and Rushikulya. These are short stretches of beach in which thousands of female turtles come ashore to nest over a few nights in the year. While mass nesting usually occurs around February, sporadic nesting occurs from December to March and eggs continue to hatch through April (pers. obs.). Olive ridleys are classified as 'Vulnerable' to extinction in the red list published by the International Union for Conservation of Nature (IUCN); threats include human activities such as urbanization and fishing and natural factors such as global warming.

In terms of conservation, the protection of mass-nesting sites is believed to be critical because of the large numbers of turtles involved, and the fact that female hatchlings return to the same beaches to nest after becoming adults (i.e., they exhibit natal homing; Plotkin, 2007). The first site, Gahirmatha, is a formally notified marine sanctuary, but Rushikulya is a public beach that is protected by a group of actors only during the winter months. It is therefore an informal conservation area. However, the Forest Department plays a major role in the conservation of olive ridleys because they are protected under Schedule I of the Indian Wildlife Protection Act. As mentioned earlier, Rushikulya forms the focus of my article because conservation and development here share an ambivalent relation that I term as 'being frenemies'.

Because Rushikulya's conservation trajectory was strongly influenced by events surrounding Gahirmatha Marine Sanctuary (GMS), I will recapitulate certain key aspects of the latter here, although a detailed account has been published elsewhere (Ramesh & Rai, 2017). In keeping with the historical trajectory of conservation practice, conservationists in Odisha were initially hostile to industrial development (as represented by the mechanized fishing sector) because the intensification and expansion of trawling meant that the offshore waters were increasingly being managed (and valued) as an economic landscape rather than an ecological one. From the 1980s onwards, conservationists drew attention to the incidental mortality of turtles during mechanized fishing, especially in the Gahirmatha area as it was both a critical habitat for olive ridleys and the best location for trawl fishers to catch high-value shrimp (see Shanker, 2015 for a detailed account). Therefore, conservation and development interests directly collided here, but since trawl fishing brought in substantial revenue in the form of foreign exchange, it enjoyed robust governmental support and little was done to restrict it in any way. However, in 1997, the government was forced to establish a marine sanctuary for two reasons: first, to convince the World Trade Organization (WTO) that India was committed to protecting breeding populations of the olive ridleys, and second, to show that the USA's abrupt decision to ban import of Indian shrimp (due to environmental concerns) was both misplaced and a violation of the terms of free trade. The WTO eventually ruled in favour of India (WTO, 1998) and trade was restored. But conservationists believed the creation of GMS was a major victory because they assumed that the government would ensure that trawling occurred only outside the sanctuary boundaries. However, in practice, the sanctuary became an 'ecological fix', that is, it was a token spatial arrangement that responded to environmental concerns without curbing industrial activity in any way (Ramesh & Rai, 2017). Development actors such as port authorities have used the existence of the sanctuary to argue for industrial access to the rest of the coast, since a dedicated space had been set aside for conservation. Coastal industries have also regularly contributed to the upkeep of the sanctuary, which has established a patron-client relation between them and the Forest Department. Therefore, the creation of the sanctuary actually facilitated co-optation of conservation by development actors in the Gahirmatha area. Moreover, if fishing restrictions were imposed in GMS, they were imposed largely on small-scale fishers, a majority of whom were struggling to make ends meet. This created a widely held belief that turtle conservation

programmes were 'anti-poor'. On the whole, the experience of creating, delineating and managing GMS appears to have left a deep and negative impression on several of the older conservationists. During interviews, they emphasized that they did not want a repetition of what happened at GMS, although those events were by then at least a decade old. Given this history, conservation in Rushikulya could be viewed as a contrast to Gahirmatha, providing an opportunity to compare participatory versus exclusionary models. However, for reasons stated in the previous sections, my interest in this article is instead in the complexities of conservation practice in an inhabited, industrializing landscape.

Creation of a 'Local Culture' of Conservation

The Rushikulya beach came to the attention of the conservation community as a new mass-nesting site about two decades after Gahirmatha (Pandav et al., 1994), when a young biologist decided to verify an account of nesting turtles he heard from a fisher living in this area. Unlike the archetypal pristine wildlife habitat, this beach is bordered by a line of fishing villages such as Purnabandha, Gokurkhuda and Kantiagad and is freely used by the residents. The town of Ganjam lies 5 km away, across a national highway (NH 5), and to the south are a missile testing centre and the commercial port of Gopalpur, both less than 10 km away. In the 1980s, trawlers from the neighbouring state of Andhra Pradesh used to fish around the mouth of the Rushikulya river in violation of the Odisha Marine Fisheries Regulation Act, but in the 1990s, these incursions reduced after violent opposition from local small-scale fishers (Pandav et al., 1994; Salagrama, 2006). This was also a period of heightened political activity: In 1994, fishers and fishworkers in all nine coastal states of India began a series of strikes to protest the government's decision to encourage joint ventures between foreign and national firms to fish in the deep waters of the exclusive economic zone (Kurién, 1995; Subramanian, 2009).

Given the turmoil in the fisheries sector, the poor socio-economic status of fishers in Rushikulya and the controversy surrounding the creation of GMS, conservationists (mainly biologists and the Forest Department) opted for a participatory approach here instead of the mainstream exclusionary one (Sridhar, 2005). For example, a call to action written in 1998 (Pandav et al., 1998), soon after the WTO controversy, identifies trawling-related mortality and artificial illumination as the main threats to olive ridleys and recommends that wildlife sanctuaries should be created at all the important nesting beaches. But then, it observes: 'A community participation approach, where the local communities benefit vocationally and economically, would be expected to yield better results than a completely protectionist approach' (Pandav et al., 1998, p. 1326). It goes on to recognize the differences within the fisheries sector by acknowledging,

Mechanised fishing has also been responsible for overfishing and may have severely depleted fish stocks in the region. Further, it would appear that most of the trawlers are owned by economically forward communities in inland Orissa and neighbouring states and even as far away as Delhi, and local fishermen are only used as labour. (Pandav et al., 1998, p. 1327)

Finally, the article suggests ‘... that the best solution for the Olive Ridleys along the coast of Orissa (and perhaps elsewhere along the coast) would be to encourage artisanal fishing and to return the coastal waters to the local traditional fisherfolk’ (Pandav et al., 1998, p. 1327). This led to a national multi-stakeholder project in 1999, sponsored by the Government of India (GoI) and the United Nations Development Programme (UNDP). One of its explicit objectives was to involve local communities and NGOs, especially in Odisha (Sharma, 2006). Note that it was supported by UNDP and not by the environment programme—I draw this distinction here to indicate how development programmes can shape conservation. The UNDP was probably involved because Rushikulya was outside the Protected Area network and so initially, the sustainable development of fisheries was also of interest.

However, when the project commenced, it focussed only on turtle conservation in Rushikulya. It came to be led by village-based NGOs and biologists, both of whom actively recruited men from the local fishing communities to carry out activities such as patrolling the beaches to count the number of nesting turtles and relocating a proportion of the nests to an artificial hatchery constructed by the Forest Department. Reflecting on this project, a biologist narrated,

[...] I would actually say *that* project was the turning point for turtles, to spread it [turtle conservation] practically all across the country. Because you know, we decided we will work with one organization in each state but the only rider we (will) give to each organization in that project (was) they will have to work with at least 4–5 nongovernmental organizations. Because we wanted to create a mass movement for turtle conservation.

I want to underscore here that this ‘local culture’ of turtle conservation was one that was carefully implanted and nurtured by the GoI-UNDP project; it had no traditional precursor in the Rushikulya region. That is, it is local in the *geographic* sense of the word but not in terms of being native to a community. For instance, Manoj, who is from Purnabandha village and has a decade of conservation experience, recalled,

When I was young, the village people used to bring the eggs and eat them. Sometimes, we’d play tennis with the eggs. That time we’d seen the eggs not the turtles. With [a biologist], I saw the turtles and worked with him for a bit – during nesting and hatching time alone.

Biswas, another resident of Purnabandha and member of one of the oldest NGOs working in Rushikulya, said

When I was young, in 9th or 10th std, and studying in the village school, that time (a biologist) came to our village and stayed the night with us. That time, very few people used to come to our village. [...] [The biologist told me] a boy like you, who can read and write, you should do something for the turtles.’ That first night itself I saw some 30,000 turtles and it changed my mind completely—that I should do something for these turtles. So every night I used to come with [him, even though] I didn’t work in the project. But I knew about the turtle from early on because the village people used to eat turtle eggs, I have also eaten the eggs a few times. And when the hatchlings emerge,

the crows and raptors used to carry them up to the top of the guava and coconut trees in the village, or drop them on top of the roof—live turtles. So I had seen these turtles but not the mother turtles, not at that time in '93. [...] No one knew the name of this village but it has become famous in India because of the turtles.

It is evident from these accounts that researchers created this 'local culture' of conservation by impressing upon people (mainly young men) the unique nature of the phenomenon occurring in their backyards. However, despite considerable interest and involvement from the villagers, only one or two of the NGOs formed during the GoI–UNDP project still existed at the time of my study. Others had dissolved once the funding had dried up or when serious internal differences emerged between members. Nevertheless, one of the main contributions of the project was that it convinced the Forest Department that if they wanted to avoid the intense conflict and criticism Gahirmatha had attracted, an informal, participatory approach was the best way forward at Rushikulya. For instance, a retired official categorically stated, 'Without community we cannot protect; it has to be there, community cooperation. Community is an important stakeholder [...] whatever we can accommodate ... their voice has to be heard'. As mentioned above, it is striking (and perhaps ironic) that development funds enabled a more progressive framing and practice of marine turtle conservation in Odisha.

But this changed in 2013, when a new senior official of the Forest Department took charge of Rushikulya. During his interview, he said that although community involvement was necessary, it was important for the Forest Department to establish its presence, failing which the public may erroneously assume that only the community was contributing to marine turtle conservation. Therefore, one of the first instructions he had given the field staff was to erect an official signboard near the national highway to indicate the way to Rushikulya beach and simultaneously signal that it was Forest Department territory of some sort. Other officials who had worked in the area in the recent past also appeared to harbour views that were more in line with an exclusionary approach. For instance, one said that it was important to 'have everything under control' and another that the beach 'should be kept sacrosanct' from the time the mass-nesting begins until the hatchlings emerged and returned to the sea. Therefore, I was not surprised to learn that in few years the department had fenced off large sections of the beach to prevent people from 'disturbing' the turtles. Depending on the context, officials alternately referred to community involvement as 'participation' or 'disturbance' and accordingly permitted or banned local conservationists from monitoring nesting turtles or entering the enclosure. But as one conservationist described it, 'I am not like the *handi* (pot) that keeps changing, I am like the *chulha* (stove) that stays in one place'. By this, he meant that officials would come and go, but it was people such as him who made a substantial contribution to long-term conservation goals.

However, in 2012–2013, the department did not have sufficient funds to undertake fencing, and the bright lights of the habitations fringing the beach misoriented thousands of hatchlings. They entered a creek that runs parallel to the nesting beach for about 2 km, as well as the villages, and eventually died. This attracted a lot of media attention, and since successful mass-nesting is often presented as 'the pride of Odisha', the Forest Department was strongly criticized

for what appeared to be inadequate protection measures. In later years, fencing efforts were redoubled to prevent such mass mortality of hatchlings and reduce their predation by stray dogs and jackals. Local conservationists recounted these episodes to me, saying that though the Forest Department claimed to be better trained than the villagers and had better access to funds, it was 'unsuccessful' in its efforts. However, they did see the necessity of having the department involved in conservation. For instance, in 2014, Biswas (the conservationist from Purnabandha) played a key role in challenging the clearance given to a businessman to start a prawn aquaculture unit close to Rushikulya. He alerted the media, and following a public outcry, the Forest Department ensured that the unit was closed down. He acknowledged that such punitive action could only be taken by a government agency. Although the campaign strained Biswas' relations with the department because it had made them look inefficient, he justified his initiative by saying, 'DFOs [Divisional Forest Officers] come and go but [the] turtles are always here - *arribadas* are a gift of nature and even if they [the Forest Department] spend Rs. 100 crores they cannot create an *arribada*'.

On the other hand, several respondents mentioned that there were tensions between various local groups because they sometimes overstated their conservation commitments to get better access to scientific networks, boost their own credibility, or to acquire financial support to ensure their long-term survival. For example, a fisheries researcher mentioned during an email exchange:

I also know of at least one [Rushikulya-based] NGO which fought tooth-and-nail for the livelihoods of the fishers being affected by the olive ridley turtle ban [i.e. the ban on fishing during the turtles' breeding season] until they realized there were more funds to be had for conservation and turned overnight into staunch conservationists who'd happily kill all the fishers in their zeal to protect the olive ridleys.

In another instance, the Odisha Traditional Fishworkers' Union decided to impose certain restrictions on its own members—they banned the use of sting ray and ring nets in the Rushikulya area, seemingly in support of sustainable fisheries and turtle conservation. However, there is reason to believe that this step was taken by the Oriya-speaking members to exclude the Telugu-speaking fishers from villages to the south of Rushikulya, because such nets were more commonly used by the latter (Sridhar et al., 2011). Here, local communities used conservation as a weapon in development-related contestations.

Another aspect of turtle conservation in Odisha is that it has by and large involved only men. One notable exception is the role played by a women's cooperative called Samudram, whose members belong to the villages around Rushikulya. In some years, the Forest Department actively sought their help. The women would come to the beach at the crack of dawn, place the thousands of hatchlings that emerged after mass-nesting in baskets and buckets, and release them close to the waterline so that they could swim out into the sea. The women would perform this tiring job over several mornings before attending to their routine work. In 2010, their leader was awarded the Equator Prize, which is another UNDP initiative to recognize local communities that engage in

conservation and sustainable resource use. However, when I spoke to Samudram in 2013–2014, the situation had changed. The women complained that in some years, the Forest Department paid them a small stipend for the time and energy they had spent in assisting conservation efforts, whereas in other years, they were told that they were volunteers and their labour counted as ‘community support’. When I spoke to them, many of the women said they would prefer to know beforehand each year if they would be compensated for their time or not.

Taken together, these vignettes indicate, first, how conservation discourse continues to echo the framing of the GoI-UNDP project and foreground the role of the community by presenting it as a ‘participatory’ or ‘local culture’ of conservation. However, in practice, the situation was much more fuzzy and fragmented, with multiple actors (including different sections of ‘the community’) engaging with olive ridley conservation in different ways. Second, the accounts point to how this local culture of conservation had variable levels of success because in some situations, it wielded more power than a large formal institution such as the Forest Department (such as in terms of the ability to direct public and official attention to certain issues), whereas in others, it was powerless (such as its inability to challenge the Forest Department’s decision to exclude local people from the fenced portions of the beach). The third aspect that the vignettes illustrate is how blurred the boundaries between conservation and development can be on the ground, even at a local scale. I elaborate further on this in the next section.

Tensions Around Conservation by Industrial Actors

Between 2006 and 2010, the Directorate-General of Hydrocarbon, under the Ministry of Petroleum and Natural Gas, commissioned satellite telemetry studies to understand turtle movement in the coastal waters of Rushikulya (and two other sites). The objective was to determine if certain ‘turtle corridors’ could be identified so that ‘rational planning of developmental activities’ could be undertaken, to assist public and private sector companies that were interested in hydrocarbon prospecting. In other words, the Directorate wished to know which parts of the coastal waters needed to be maintained as ecological areas, or corridors that permitted turtles to move back and forth from the nesting beaches, so that the rest of the offshore region could be converted into an economic landscape where drilling, mapping and other exploratory work could be undertaken without ecological and economic activities conflicting with each other. Biologists from the Wildlife Institute of India undertook the study (Wildlife Institute of India, 2011) and found that since this species moves erratically over several hundred kilometres from the shoreline, they could not identify fixed areas that could be designated as ‘turtle corridors’. Instead, they recommended that all hydrocarbon exploration should be conducted only beyond 50 km from the mass-nesting beaches. Second, they proposed that a circular eco-sensitive zone over land and sea should be marked at the major nesting beaches, with a core area of radius 10 km and extending for another 15 km, and development projects should not be permitted inside this zone. They

also supported the fishers' demand for compensation during the turtle season, when they were not allowed to go to sea. And finally, they suggested that a corpus fund could be created for marine research and conservation from donations acquired from corporate social responsibility (CSR) initiatives.

The last recommendation is a telling one for it reveals that although the biologists may have in principle been opposed to development projects in turtle habitats, in practice, they were not averse to acquiring financial support from such projects for conservation programmes. Further, it shows how spatial partitioning of activities does not necessarily result in one sector becoming disconnected from the other—if the biologists' recommendation had been followed (and I could not ascertain why it was not), offshore conservation and development would have appeared to be independent of each other in cartographic terms but been closely connected in operational terms since activities of the former would require the financial support of the latter. In other words, this proposal ran the risk of repeating the Gahirmatha model in practice, even though it did not subscribe to the creation of a formal sanctuary.

I provide a second illustration of ambivalent relations using the example of a chemical factory that is close to the Rushikulya beach. The management of this factory donated money and materials for turtle conservation each year as a part of their CSR activities, but they also used bright external lighting, even though it is well known that strong artificial illumination reduces the survival rate of thousands of hatchlings by misorienting them so that they move away from, instead of towards, the sea. This is a serious threat because even under favourable conditions, only one out of 100 hatchlings that return to the sea reaches maturity. However, a lighting ordinance has not been passed even though this was recommended decades ago (Pandav et al., 1998). In fact, ambient lighting has significantly increased with installation of lights along the National Highway and expansion of habitations. Further, since olive ridleys are migratory, the Forest Department receives nominal funds for their conservation, and it is expected to raise the remaining amount it needs from industrial donations (Ramesh & Rai, 2017). Since this is provided by industries in the vicinity, such as this factory, the Forest Department has been unable to impose even simple restrictions such as banning the use of bright external lights during the hatching season.

In certain years, another industrial actor, the Gopalpur port, contributed funds for the Forest Department to hire vessels for patrolling the offshore waters to prevent fishing during the turtle season. But it too has a strained relation with conservationists because some of the latter believe that channel dredging and construction of groynes have accelerated erosion of the surrounding beaches which are sporadic nesting sites. Moreover, in 2010, an oil spill near the port spread northwards up to Rushikulya beach, affecting the turtles and fisheries in the area (Mohanty, 2010).

As mentioned earlier, it was local conservationists (rather than the Forest Department) who acted as sentinels and brought such regulatory oversights to public attention. This often pitted them against industrial actors, but it is the very fact that Rushikulya is a public beach and not a formal protected area that enables their participation. The Forest Department and the biologists are acutely aware of this. At the level of discourse at least, they recognize that local participation has

its merits insofar as it can voice concern over the impact large development projects can have on coastal biodiversity and livelihoods, whereas officials are often not given the scope to comment on such proposals. Given the experience of Gahirmatha, proponents of economic development have periodically mooted the idea of demarcating a turtle sanctuary here too, in an effort to spatially discipline and localize conservation concerns (Ramesh & Rai, 2017). This has resulted in an ironic situation in Rushikulya where large industrial actors tend to argue for the establishment of a formal sanctuary while conservation actors (especially but not limited to, the Forest Department and biologists) strongly oppose it. A second reason for the conservationists' resistance is that they have acquired a more nuanced understanding of the different economic actors, such as small-scale fishers, trawl operators, industrialists, and their perceptions of conservation. As one biologist explained,

Setting up of a PA in Rushikulya, I really don't think it's a solution. Rather, [it will] ruin the whole thing. Because right now, there is no confrontation between the turtles and the fishermen there [...] and I have seen personally that the turtles are just swimming into the nets, ripping it off [...] So I think that more than turtles, the fisherfolks are the ones who are affected much [...]. [But if there is a sanctuary]... the people who so far have been living *with* the turtles will feel that because of the turtles, we are losing our space and the fishing space and docking space and... that itself can have a kind of *adverse* effect.

On other occasions, industrial actors were quick to point out that the nesting numbers at Rushikulya appear to be considerable and interannual variations have been within acceptable limits, although conservationists keep voicing alarm over how different development projects could threaten turtles. For instance, a port developer from another part of the coast told me that although mass-nesting per se was a rare phenomenon, olive ridleys were a common species, and he knew of a biologist who referred to them 'as cockroaches of the sea'. Further, he explained,

... most of these activist organizations believe that they can conserve the environment only by being hostile to development. Now that is impossible. Development is inevitable. You can't say that 'Look, in other places we have brightened the coast with tourism and industry and everything, so turtles cannot go [there, whereas], you are the only poor state who have not brightened your coast, so remain dark so that turtle continue to come'.

He went on to say,

Any development will affect the ecosystem, *any* development. The only question we can ask is, whether the effect on the ecosystem is of a nature which cannot be mitigated. Then you should not have the development. But if the effect on the ecosystem is of a nature which can be mitigated, there is no reason why you should not do the development.

In his opinion, this lack of nuance in the opposition to development rendered it myopic because it did not benefit coastal communities in the long run. Moreover,

he felt that by casting development agents as villains, conservationists foreclosed the possibility of implementing mitigatory measures.

In general, large industrial actors appeared to believe that conservationists tend to overestimate the threat posed by development projects, and that if one went by their predictions, coastal Odisha would have to remain a backward (i.e., industrially poorly developed) region. Of course, such industrialists altogether ignored the existence of agriculture in the fertile deltaic regions and high-value fisheries in coastal waters. Overall, industrialists acknowledged that the marine turtle conservation programme in Rushikulya (or Odisha) was 'successful' only to ultimately marginalize ecological concerns: Either they viewed turtle conservation as being impractical and elitist vis-à-vis the development requirements of the coastal communities and the larger state, or they questioned the need for the continued existence of such programmes once turtle populations were deemed healthy. Therefore, conservationists were forced to strike a tough balance between establishing the necessity of their engagement while not letting their success undercut their future presence. Moreover, they could not afford to be overtly hostile to industrial development given the strong interest of the state government. It was only by repeatedly representing Rushikulya as an essentially ecological landscape, could they create some discursive space for their concerns about marine biodiversity. This representation was also a product of the fragmented understanding of most conservationists, who failed to appreciate the ways in which the political economy of Odisha was structuring the possibilities of doing conservation, and who instead viewed development-related events as isolated or extraneous issues. Overall, the ambivalent nature of their relationship with industrial development was an indication of the considerable power asymmetry involved.

Gaps in Integrated Approaches

As mentioned previously, biologists familiar with Rushikulya supported the local communities' livelihood-seeking efforts—they said fishing practices in this region were more ecologically benign than at Gahirmatha. In their opinion, as long as fisheries here did not intensify without adequate planning, it did not pose a problem. Earlier in 2004, some conservationists had attempted to create a state-level network, the Orissa Marine Resources Conservation Consortium, comprising small-scale fishers, chelonian and fisheries researchers and NGOs (OMRCC; Sridhar & Gopal, 2005). However, hard-line conservationists were dissatisfied with this. One respondent described OMRCC as a 'fish-drying business' that did not further biodiversity-related goals. Moreover, OMRCC did not find traction with a major development actor, the Fisheries Department, because as with earlier Integrated Conservation and Development projects (ICDP), there were conflicts of interest: This department had always focussed on promoting mechanized intensification of fishing. Therefore, the idea of not maximizing fish harvests to promote sustainable development of the sector was very discomfiting. Further,

from past experience, the department knew that implementing turtle conservation-related restrictions adversely affected the food and livelihood security of fishers (Salagrama, 2006). As with the case of building a ‘local culture of conservation’ at Rushikulya, connecting up individual actors to form networks could add to existing tensions, and for a genuinely participatory approach to work, members had to be willing to negotiate and perhaps even compromise on some of their short-term goals.

In 2010, another attempt was made under the aegis of the Integrated Coastal Zone Management (ICZM) Project, funded by the World Bank. A descendant of ICDP, it aims to ensure multi-sectoral coordination over a period of 5 years. As the ICZM website optimistically states,

The project on long-term balances environmental, economic, social, cultural and recreational objectives, all within the limits set by natural dynamics and would facilitate integration of the terrestrial and marine components of the target territory, in both time and space through a comprehensive ICZM Plan. The ICZM plan would be extremely useful for management of natural resources as well as development of the infrastructure in coastal zone.

One of the major objectives of this project is to provide alternative livelihoods for marine fishers because mechanized fishing is banned within 20 km of the coastline during the breeding season of the olive ridleys (for seven months, November to May) in order to prevent accidental mortality of the turtles. The project seeks to convince fishers to take up aquaculture, rear poultry or cattle, or grow vegetables to supplement their income. Like the ICDPs, such efforts aim to gradually shift local communities away from the use of certain natural resources, rather than facilitating their stewardship of these resources. As a result, they raise similar questions about the ethical dimensions of such projects. As one biologist said, ‘[...] taking the fishermen out of fishing is not a solution ... you can’t just take away their profession for the sake of conservation. [...] Throughout the coast, how many families or how many villages will you convert?’ This biologist felt that projects promoting alternative livelihoods were actually a sign that attempts to promote sustainable fishing practices in Odisha had been ‘an epic failure’.

Yet another idea promoted by the ICDPs, ecotourism, has found a new lease of life in the Rushikulya area. A recent report suggests that turtle tourism has the potential to meet conservation and development goals and goes on to cite successful examples from other places such as Velas on the west coast of India and other countries such as Brazil and Costa Rica. However, the report noted that community members wanted their development-related needs to be met first, since many villages lacked potable water, sanitation, healthcare, etc. (Note that this NGO was defining development as more than just industrialization or increase in incomes.) Moreover, villagers were interested in mass tourism because they viewed it as a rapid means of increasing their earnings (Chandarana et al., 2017). Although ecotourism is yet to be tested in Rushikulya, studies in other locations indicate that it is a complex industry that may not always result in positive

outcomes for the community (see, for instance, Igoe et al., 2010; Kunjuraman & Hussin, 2017).

Perhaps the most serious flaw of these alternative livelihood projects is that they ignore the role of large-scale industries in triggering undesirable environmental change. As one respondent phrased it,

[...] development is just like a kind of viral stuff [...] Development won't stop in one area so there are quite a lot of other [issues involved]... See, if you are constructing a port, we need some other stuff so... it multiplies. So even if we start with one single building, it'll kind of proliferate in such a large way that it engulfs a huge area.

His comments raise the provocative question of whether the government or conservation agencies should offer industrialists—rather than small-scale fishers—‘alternative livelihoods’. Can we even imagine the possibility of fostering a more sustainable and equitable model of industrialization in Odisha?

Conclusion

In this article, I have focussed on how biodiversity conservation unfolds in an inhabited, industrializing landscape such as coastal Odisha. I found multi-sited ethnography helpful in tracing how projects to conserve olive ridley turtles in Rushikulya are intertwined with development. The research study revealed the entanglements and antagonisms more clearly than an exclusive focus on discourses and policies, or even programmes and projects, would have done. I found that both industrial and conservation actors were involved in conservation practice and that they borrowed each other's concepts and tools, as well as drew on their own contextual and experiential understanding (rather than relying on formal expertise alone). On occasion, conservationists embraced the development agenda and industrialists ardently supported protected areas. These actions may appear contradictory but paying attention to different actors brought to light the multiplicity of meanings at work. For instance, ‘development’ is a pervasive idea that all actors subscribed to, albeit in ways that were often incompatible—large-scale, community-based, sustainable, industrial, resource-based, export-driven, etc. Therefore, although conservation programmes in Odisha tended to bracket out considerations of political economy as external to their concerns, in reality, it affected the everyday activities of conservation practitioners whether they were biologists, members of NGOs or Forest Department officers. For this reason, I suggest that it is important for conservation practitioners to understand the place of individual development projects in the context of a larger political economy and choose suitable strategies of engagement. The second important insight that this actor-centred approach provides is that the outcomes are often ambiguous even to those who are deeply involved in a situation.

This leads to my next argument, which is academic narratives of biodiversity conservation are often dated in that they describe the relation between conservation and development in binary terms, similar to the case of ICDPs launched in the

1990s. Instead, building on the idea that compromise is an inescapable feature of such governance (Li, 1999), I use the term ‘being frenemies’ to describe the fluid and ambivalent power relation between the two domains in mixed landscapes such as Rushikulya. It foregrounds the unresolved struggles and confusions that conservation practitioners face when they translate programme goals into practice, including the ethical dilemmas arising from the social, economic and ecological contexts in which they work (Aini & West, 2018; Mbaria & Ogada, 2016). To conclude, this article adds to literature on conservation vis-à-vis development by foregrounding practitioner perspectives and highlighting the role of power in shaping their responses to evolving situations.

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Note

1. The term ‘development’ can be used to indicate economic development (including the construction of infrastructure) as well as social change and progress (Jeffrey & Harriss, 2014). However, in this article, the term is used in the narrow sense, to refer to economic development alone.

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