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INSIGHTS FROM THE FIELD

De jure and De facto Land Management Approaches of Forest Officials: Reflections from the Field and Archives

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1. INTRODUCTION

It was January 17, 2022, and I was in the Sathyamangalam Tiger Reserve (STR) in Erode, Tamil Nadu, a biodiversity-rich protected area (PA) with interspersed forest and agricultural land. My field assistant and I waited on the red concrete steps of the range office for the range forest officer (RFO) to arrive. The range office was a small building, painted yellow with brown windows and a banner displaying its name. A notice board hung on a wall listed the documents the public must submit to seek compensation for crop damage, loss of life, and livestock casualties caused by wildlife.

Forest administrators, especially field staff like RFOs, play a key role in implementing conservation and development plans and policies; however, few studies have closely examined their on-the-ground work to understand the context and challenges (Fleischman 2016; Vasan 2002). I was interested in understanding the forest department's (FD) approach to managing the PA's land and ecosystem services, both on paper and in practice. The objective was to compare *de jure* (on paper) and *de facto* (in practice) FD management approaches. STR management plans (MPs) provided information on the former, and information on the latter came from interviews.

To understand the de facto management approaches of the FD, RFOs were selected for key informant interviews[1] due to their knowledge and positions

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of power in field decision-making and staff supervision. From mid-January to mid-February 2022, all ten RFOs of STR were contacted; however, due to scheduling conflicts, only six interviews were conducted.[2] During each interview, the RFO was shown the topographic map of the range under his supervision.[3] The map served as a visual probe, aiding the respondent's memory and maintaining focus on the range (Harper 2002).[4]

When these interviews were conducted, the Tiger Conservation Plan (TCP) (TNFD n.d.) had not been released. However, the PA was declared a tiger reserve (TR) in 2013, so the objectives of a TR were loosely pursued. The Sathyamangalam Wildlife Sanctuary (WLS) Management Plan (2010–2020) was still in effect at the time (TNFD 2010). To understand the de jure management approaches, I selected these two forest MPs,[5] as they reflect the FD's commitments and serve as guiding principles for the field staff to achieve their objectives (Gutierrez Garzon *et al.* 2021). The MPs and interviews were analysed to identify their similarities and differences.

Here, I present insights from my analysis of the FD's PA land management approaches through MPs and practices as revealed through interviews.

2. ON PAPER AND IN PRACTICE: UNDERPINNINGS OF THE FD LAND MANAGEMENT APPROACHES

The Sathyamangalam WLS MP and TCP are instruments for forest bureaucratic practices. The WLS MP prioritizes wildlife conservation, while the TCP follows a tiger-centric model. Interviews with the RFOs revealed their ongoing efforts to adhere to the rules and regulations in the MPs for site-specific targets. Comparing the MPs with interview findings, I found

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[1] The key informant interview technique is a semi-structured method for interviewing respondents. The key informants are selected using purposive sampling based on criteria such as their knowledge, role in the community, and willingness to participate (Tremblay 1957). The interviews follow an interview guide on topics related to the study.

[2] Of the six, four were 1-1.5-hour interviews in English at range offices. My field assistant helped conduct two phone interviews with an RFO and a forester in Tamil, lasting 30 mins each. A forester from the same range, ranked below the RFO in the FD hierarchy, was interviewed to corroborate the data from these shorter interviews.

[3] At the time of these interviews, no female RFOs worked in STR.

[4] For phone interviews, respondents were informed about the use of the corresponding range map, which was used to a limited extent as a visual cue.

[5] Since the TCP was only partially in force during the interviews, this represents quasi-de jure management.

that geographic relationships, land politics, habitat management, and practitioners' situated knowledge underpin FD land management approaches. I elaborate on each below.

2.1. Management Philosophies and Geographic Relationships

The management philosophies in both MPs follow the "landscape approach", aiming to address multiple objectives of the PA landscape. The landscape includes the "zone of interaction" (DeFries, Karanth, and Pareeth 2010) and extends to the surrounding areas of the PA, reflecting the unavoidable geographic relationships here. The TCP is the first STR MP to include ecosystem services and climate change in PA land management strategies. This shows the FD's efforts to ensure PA mandates align with international agreements like the Convention on Biological Diversity and national priorities set by the Ministry of Environment, Forest and Climate Change (ET Bureau 2014; MoEFCC 2017). However, field practitioners like RFOs are not always trained on these updates and are already dealing with existing challenges.

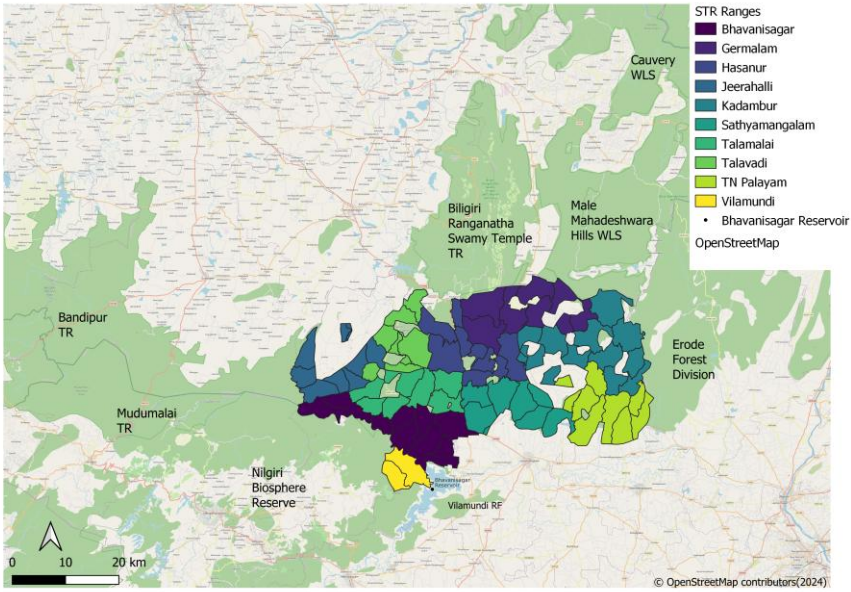
The RFOs acknowledge the complexity of land management in STR, citing its geographic structure, diverse terrain, and fragmented forest habitats interspersed with agriculture and settlements. STR spans two states (Karnataka and Tamil Nadu) and links to nearby PAs, further complicating management. Referring to the range map, a respondent noted:

> On the corner of the Palayam beat around 700 hectares of revenue land exist with forest-like characteristics. It lies on the interstate border. During the cultivation period, wild animals migrate to this revenue land, moving to the surrounding agricultural fields in the evening. Since it is a revenue land, we cannot create an elephant-proof trench without permission from the district collector.

2.2. Land Politics

The complex geographic relationships lead to land politics. The FD must seek permission from the revenue department to use revenue land, illustrating differing land control management even among state agencies in and around STR. Declaring the PA a TR gave the land an identity of enhanced protection. The impact of this identity shift is evident in the TCP's planning structure and the RFOs' efforts to protect the PA. This TR identity adds to the land's existing identities for local people (e.g., land ownership, tenure regimes, sense of belonging), creating potential for conflict and coexistence in PA management.

Figure 1: The Sathyamangalam Tiger Reserve and Its Surrounding Landscape[6]



Source: The author has created this map using the map data of the STR ranges acquired from the Tamil Nadu Forest Department and the **OpenStreetMap** in QGIS.

As a TR, PA land use and management are subject to National Tiger Conservation Authority (NTCA) guidelines, a statutory body under the MoEFCC. The TCP mentions this; however, the WLS MPs do not have such requirements, WLS being a less stringently monitored management regime. The MPs and interviews highlighted prioritizing monitoring land conversion (e.g., forest to agricultural land use) and land modifications within existing land cover (e.g., changes within grassland composition due to fires). Interviews also showed that various land uses are monitored, regulated, and prohibited to minimize violations of land use regulations. This requires daily negotiations with locals, including indigenous people and others from various social strata. The RFOs emphasized facing challenges in management due to legal and illegal mining near PA borders, changing land leases, real estate purchases around STR, and the need to constantly

[6] This map shows how STR (in centre) connects to the nearby PAs. It also highlights agricultural enclaves (sites visible outside the ranges) within STR.

monitor human–wildlife conflict zones near forest–agricultural lands, dams, and roadways.

Respondents shared concerns about land use management in STR and the imposed regulations. One respondent remarked:

> The Hill Area Conservation Authority rules are applicable here. Also, the eco-sensitive zone (ESZ) notification, 2019, is implemented extending up to 1 km around STR. Without the NTCA's permission, commercial activities aren't allowed inside the ESZ. But there are still private, small resorts running (illegally) in the name of farmhouses. We are taking measures to control this.

Another respondent mentioned a long-standing unresolved land conflict near the Bhavanisagar dam:

> There are encroachments near the Bhavanisagar dam area for which local communities there have been given eviction notices. They replied that they were landless and that it was the government who gave them land on lease before the 1980s. These land leases were terminated after the Forest Conservation Act, 1980, came into effect, but these people are unwilling to leave.

During a previous field visit to the dam catchment area with a forest guard, local communities expressed grievances about the plight caused by the FD. This reflects that the state acts as both a "giver" and "taker" (Chakravorty 2013), highlighting the complexity of land management beyond the FD.

2.3. Habitat Management and Practitioner's Situated Knowledge

Land modifications due to forest fires and invasive species, e.g., *Lantana* sp. and *Prosopis* sp., are key concerns addressed in habitat management strategies in STR. Fire management by RFOs focuses on prevention, control, and adherence to the MP's "standard operating procedures" to prevent habitat loss for wildlife. Local residents are engaged as supplementary workers in fire control efforts. Data collected by the FD field staff on recent and past fire incidents are studied by the FD to identify fire-prone locations within the PA. This data acts as material records—proof of the functioning of bureaucratic machinery documented in paper or digitally. It informs the RFO's knowledge of fire occurrences within his range and influences his habitat management plan.

The spread of invasive species in Indian PAs threatens biodiversity by competing with and suppressing native vegetation (Hiremath and Sundaram 2013). This concern applies to STR, as reflected in both MPs and interviews. According to the TCP, approximately 15,000 ha and 7,000 ha of forest cover are now dominated by *Prosopis* sp. and *Lantana* sp., respectively,

along with three other prominent invasives: *Parthenium* sp., *Eupatorium* sp., and *Senna* sp. The MPs aim to recover "natural vegetation" by removing invasives. The RFOs are cautious about uprooting them. A respondent notes, "More grasses and native species like Butea, Pongam, and Terminalia are emerging in a Prosopis plot cleared last year. Previously, gaurs and elephants couldn't cross this area, but now, it is used as a resting place by herbivores." He provided reasons for not proposing invasive plant removal from another site: "In case of invasive sites near Kongarpalayam, Vilankombai, the extensive growth of Prosopis is on the fringes. If we clear that, people can easily enter the forest." Thus, the practitioner's situated knowledge is used in decision-making for invasive species management.[7]

3. REFLECTIONS

I found substantial conformity between de jure and de facto FD land management practices but also witnessed the complexity and challenges of on-ground implementation. The field officials' everyday practices and challenges indicated the subtle differences between paper and practice. They provided a glimpse into how de jure plans and the accompanying regulations shape land use and management in a PA. Both MPs exhibit numerous similarities—the key distinction being the proposed objectives and extent of protection measures. The RFOs' responses reflect their role as managers who use legal tools to enforce order and achieve targets while navigating differences in land control and potential conflicts. Geographic relationships and habitat management represent the space where land management activities occur. These activities are influenced by practitioners' situated knowledge, whose individual agency, in turn, affects decision-making. Land is a state subject with aspects like land acquisition on the concurrent list, so it is closely linked to land politics in STR. This attempt highlights these crucial interlinkages, which are often overlooked by conservation researchers and practitioners. It urges current and future conservationists not to discount the agency of actors on the ground in shaping land management in PAs.

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[7] Tamil Nadu, where this PA is located, is the only Indian state with a separate policy addressing invasive plant species—the "Tamil Nadu Policy on Invasive Plants and Ecological Restoration"—highlighting their importance in state forest management.

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