Compensatory Afforestation in Odisha, India:
A political ecology of forest restoration

by

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Graduate Department of Geography and Planning, in the University of Toronto

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Abstract

To mitigate climate change and protect biodiversity, states across the globe have ambitious plans to restore degraded lands (globally, 350 million hectares by 2030, as per the latest Bonn Challenge commitment). Seeking to understand the potential unintended consequences of these vast state-led restoration efforts, in this thesis I explore India’s seven-billion-dollar compensatory afforestation program through a political ecology lens. I find that in practice this policy contradicts India’s broader attempts to democratize forest governance by failing to foreground local communities and institutions, affirm customary rights, and safeguard livelihoods. Instead, compensatory afforestation contributes to dispossession and precarity, while relying heavily on industrial tree plantations. With ground-truthed geospatial data, I explore how this policy impacts Adivasi shifting cultivators on their tenure-insecure territories in Odisha, east India. In so doing, I support calls from the field of Forest Landscape Restoration (FLR) to ensure restoration is tenure-sensitive and rights-based.
Acknowledgements

The diverse inspiration that I weave together in this thesis comes from conversations as a student at the University of Toronto, on Turtle Island; fieldwork with wonderful accompaniment in Odisha, India; co-living in feminist community in Mysuru, Karnataka; and now at the secretariat of the Rights and Resources Initiative, in Washington, DC. The mobility and intensity of this journey has been a challenge and a blessing.

I experience a feeling of mutual obligation with these communities and the lands that hold them. I especially wish to recognize those who took to the streets in Keonjhar town in 2008 and 2010, demanding an end to the plantations on Juang and Bhuiyan territories. They, and those who came before them, set the narrative I am picking up here.

To those who cared for my mind and pushed my thinking: Neera Singh, Kundan Kumar, Sobha Madhan; Puspanjali Satpathy and fellow mentors; Phil Son, Amil Davis, and Drew Kerr; and my committee members Scott Prudham and Christian Abizaid.

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<th>Description</th>
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<tbody>
<tr>
<td>AAA</td>
<td>Abad Ajogya Anabadi - uncultivable wasteland</td>
</tr>
<tr>
<td>AJA</td>
<td>Abad Jogya Anabadi - cultivable wasteland</td>
</tr>
<tr>
<td>BJP Range</td>
<td>Bhuiyan-Juang Pidha Range</td>
</tr>
<tr>
<td>CA</td>
<td>compensatory afforestation</td>
</tr>
<tr>
<td>CAG</td>
<td>Comptroller and Auditor General of India</td>
</tr>
<tr>
<td>CAMPA</td>
<td>Compensatory Afforestation Fund Management and Planning Authority</td>
</tr>
<tr>
<td>CA</td>
<td>Compensatory Afforestation plantation</td>
</tr>
<tr>
<td>CFR</td>
<td>Community Forest Rights</td>
</tr>
<tr>
<td>DFL</td>
<td>degraded forest land</td>
</tr>
<tr>
<td>FAC</td>
<td>Forest Advisory Committee</td>
</tr>
<tr>
<td>FCA</td>
<td>Forest Conservation Act (1980)</td>
</tr>
<tr>
<td>FD</td>
<td>forest department</td>
</tr>
<tr>
<td>FRA</td>
<td>The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006</td>
</tr>
<tr>
<td>HH</td>
<td>households</td>
</tr>
<tr>
<td>ITDA</td>
<td>Integrated Tribal Development Agency</td>
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<tr>
<td>IUCN</td>
<td>International Union for Conservation of Nature</td>
</tr>
<tr>
<td>JDA</td>
<td>Juang Development Agency</td>
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<tr>
<td>JFM</td>
<td>Joint Forest Management</td>
</tr>
<tr>
<td>MOEFCC</td>
<td>Ministry of Environment, Forests, and Climate Change (also MOEF)</td>
</tr>
<tr>
<td>NCAP</td>
<td>non-compensatory afforestation plantation</td>
</tr>
<tr>
<td>NFL</td>
<td>non forest land</td>
</tr>
<tr>
<td>NVP</td>
<td>Net Present Value</td>
</tr>
<tr>
<td>PCCF</td>
<td>The Principal Chief Conservator of Forests</td>
</tr>
<tr>
<td>PESA</td>
<td>Panchayats (Extension to Scheduled Areas) Act (1996)</td>
</tr>
</tbody>
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RML Renewal of Mining Lease
RoR Record of Rights
RRI Rights and Resources Initiative
RTI Right to Information Act (2005)
VSS Van GJISuraksha Samita (Forest Protection Committee)

Glossary

Abad Ajogya Anabadi “uncultivable wasteland”
Abad Jogya Anabadi “cultivable wasteland”
Basuki Mata Earth Goddess
Bethi forced labor
Block administrative sub-unit, demarcated for the purpose development
Dharna sit-in
Gangei jowar (millet)
Gram Panchayat local rural self-government unit, usually consisting of a few villages
Gram Sabha general body of Gram Panchayats in rural areas of India; unit for local self-government
Jhum shifting or swidden cultivation
Khata No. Account number given to a set of owners who own a portion of land with various Khasra Nos.
Khasra No. Plot number
Majang Bachelors’ dormitory among the Juang
Mandia finger millet
Mazduri Wage labor
Patta document of land title, denoting ownership or lease
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pirha/Pidha</td>
<td>Adivasi unit of governance in Keonjhar</td>
</tr>
<tr>
<td>Podu</td>
<td>shifting or swidden cultivation</td>
</tr>
<tr>
<td>Pradhan</td>
<td>Secular village headman</td>
</tr>
<tr>
<td>RoR</td>
<td>Record of Rights, main land record</td>
</tr>
<tr>
<td>Saag</td>
<td>leafy greens</td>
</tr>
<tr>
<td>Sagwan</td>
<td>teak (Tectona grandis)</td>
</tr>
<tr>
<td>Sal</td>
<td>Shorea robusta</td>
</tr>
<tr>
<td>Tahsildar</td>
<td>revenue officer managing a unit of revenue administration, consisting of a few hundred villages</td>
</tr>
<tr>
<td>Toila</td>
<td>shifting or swidden cultivation</td>
</tr>
<tr>
<td>Zamindar</td>
<td>land owner; intermediary tenure holder under the zamindari system</td>
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1 Introduction

A global push to restore degraded landscapes, increase carbon sequestration, and safeguard biodiversity is underway as part of the intergovernmental response to climate change. One approach is Forest Landscape Restoration (FLR), which aims to “bring back functionality and productivity of vast areas of degraded land while contributing to social and economic wellbeing” (McLain, Lawry, Guariguata & Reed, 2018). In 2011, as part of the Bonn Challenge\(^1\), 47 governments committed to widescale restoration of degraded lands using the FLR approach, pledging to restore 350 million hectares by 2030. Despite labels such as “degraded land” and “wasteland,” areas targeted for restoration are often commons held by local communities. In fact, more than 30% of the lands proposed for restoration are inhabited, forming the homelands of more than 450 million people worldwide (Chhatre and Agrawal, forthcoming).\(^2\) Top-down, technocratic eco-initiatives have historically framed local communities as obstacles to broader environmental agendas, which has limited programs’ success and resulted in dispossession and displacement of local communities. In the case of forest restoration, the presence of nearly a half-billion forest-dwellers on lands targeted for restoration presents an opportunity for a drastic course-correction to safeguard rights and cool the planet.

The FLR approach recognizes this in principle by emphasizing natural forest regeneration and the active involvement of local stakeholders. However, in practice, many governments rely on large-scale afforestation and commercial species, often disregarding local needs, de facto land uses, and customary governance systems. Forest agencies are able to do this in large part because forested lands continue to be state-owned and forest-dwelling communities’ rights and tenure

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\(^1\) Like the 2014 New York Declaration on Forests, the Bonn Challenge is an example of governments, civil society, scientists, practitioners and the private sector uniting around a common forest restoration agenda. It was launched in September 2011 at a high-level event co-hosted by the German Ministry of the Environment and the International Union for the Conservation of Nature (IUCN). The original commitment to restore 150 million hectares of degraded and deforested land by 2020 was expanded to 350 million hectares by 2030 (IUCN-India, 2017). The Bonn Challenge is linked to other commitments related to biodiversity (Aichi Biodiversity Targets), emissions reductions (UNFCCC and Paris Agreement), and land degradation target (Rio+20).

\(^2\) According to the FAO, more than 1.6 billion people around the world live in or nearby forests, depending on them for diverse subsistence needs including fuelwood, forest foods, agroforestry, and grazing livestock.
remain insecure. Continuation of colonial enclosure of the commons has rendered forest dwellers as “encroachers” on state lands, leading to major conflicts when conservation, industry, or other projects are externally imposed within the community domain, including forest restoration.

In the interest of both safeguarding local communities and promoting community-based forest restoration, FLR experts recommend rights-based and tenure-responsive FLR (McLain, Lawry, Guariguata, & Reed, 2018; van Oosten, 2013; Rai, Bhasme & Balaji, 2018). This would ensure that restoration strategies harmonize with broader rights recognition efforts and protect community livelihoods and conservation expertise. For example, India, China, Brasil, and Indonesia have forest rights laws in place which recognize community-based tenure. If each of these countries chooses to meet their ambitious restoration targets through a rights-based strategy, conflicts between local claims and restoration goals will be avoided and creative energies of local people can be channeled into widespread ecological restoration.

On the other hand, further concentration of territorial and financial power with state forest agencies, even in the name of green objectives, has been met with resistance from civil society, including local communities, non-governmental organizations (NGOs), and social movements. FLR’s dual objectives of social and ecological wellbeing have emerged based on lessons learned from previous, unsuccessful attempts to roll out environmental policies where the interests of the forest communities were sidelined (such as REDD+, see Nuesiri, 2018). Forest-based communities around the world, numbering up to an estimated 1.6 billion people (World Bank, 2002), depend on forests for diverse livelihood needs including fuelwood, forest foods, agroforestry, and grazing livestock. Moreover, in many cases, intimate relationships with the forest influence their worldviews, livelihoods, and local institutions. This shapes their responsiveness (or lack thereof) to large-scale environmental efforts, particularly those perceived as obviously unsound (such as monoculture tree plantations). A successful forest restoration program will necessarily build on forest communities’ intergenerational expertise

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3 It will also support governments’ ongoing work towards meeting the Sustainable Development goals on poverty, inequality, and the environment.
and integrate with their already-existing forest governance systems if climate change mitigation agendas are to be met.

In this thesis, I contribute to the broader call for tenure-sensitive, community-led Forest Landscape Restoration by highlighting the implications of widespread state-led restoration on local communities in India. India is an interesting and relevant case for several reasons. First, India has large afforestation ambitions as well as massive potential to recognize community forest rights. Importantly, in many cases, these two agendas are competing for the same swaths of forested commons, which number in the tens of millions of hectares. Given the well-documented legacy of decentralized forest-based community protection in India (Kant, Singh, & Singh, 1991), there is huge scope for India to be a global frontrunner in community-led FLR if these overlaps are approached from a rights-based perspective.

India’s national forest policy of ensuring 33% forest cover (currently at 21%, MOEFCC, 2017) has led to a suite of afforestation and reforestation programs, including a relatively rigorous statutory offset for private and public companies seeking permission to deforest. This requirement, compensatory afforestation (CA), is the focus of my thesis. According to the Forest Conservation Act (1980), public and private companies seeking clearances for projects such as mines and dams must be accountable for forest loss by funding “compensatory” tree-plantation elsewhere. With an accumulated value of more than seven billion dollars, the fund stands to seriously impact forest governance in India. It has already generated responses from communities and civil society organizations (CSOs) critiquing the use of industrial tree plantations as “restoration,” whereby block plantations of predominantly commercial tree species are intercropped with a few locally-useful species. These critique have highlighted the consequences of CA plantations on livelihoods and community rights (Kukreti, 2017), building on the government’s own reports which point to vast mismanagement of funds and poor implementation (Comptroller and Auditor General, 2013).
1.1 Research questions and methods

In this thesis, I focus on the state of Odisha. Odisha is located on India’s eastern coast and is home to diverse and active Indigenous communities as well as an expansive mining industry. The following research questions guide my thesis.

1) How does state-led restoration in Odisha intersect with ongoing national processes of democratization of forest governance?
2) How does compensatory afforestation impact forest-dweller livelihoods and rights in Odisha?
3) How have forest-dweller communities and civil society organizations (CSOs) responded to state-led restoration?

To explore these questions, I focus on three blocks in two districts of Odisha. These include Banspal and Telkoi blocks in Keonjhar district which are current leaders in CA and Thuamul Rampur block in Kalahandi district which is an upcoming CA hotspot. I collected primary geospatial and ethnographic data to understand the extent of plantations in each block and held focus groups to understand local livelihoods and impacts. This was complemented with plantation data from multiple government databases (eGreenWatch, Bhulekh, Parivesh, Odisha Gazette) as well as government reports. To understand community and civil society responses to CA, I accessed civil society archives, reports, and materials. Finally, I referenced dissertations available in the public domain, grey papers from civil society organizations, and scholarly literature about CA in the Indian context. Because the main stakeholders in forest governance are often Indigenous, women, or both, decolonial⁴ and feminist thought has guided me in

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⁴ Literature about the relevance of global Indigenous philosophies to the Indian context has challenged its applicability (Shah, 2007), while North American Indigenous scholars have also lamented the challenges of connecting with subaltern studies (Byrd & Rothberg, 2011). Others have found resonance between Adivasi experiences and global indigeneity (Karak, 2016; Wilson, 2016; Chakraborty, 2004). My personal experience is that when indigeneity is articulated as a global phenomenon it is found to be relevant by Adivasi leaders, and following that lead I attempt to strengthen my analysis with global Indigenous literature in this thesis.
exploring my research questions on Adivasi territories\(^5\) in India. Throughout the thesis I attempt to foreground voices that academic work tends to undervalue.

1.2 Political ecology of restoration

Political ecologists explore political economy concerns, such as power and justice, through interdisciplinary analysis of environmental change. This politicizes the nature-society interrelationships that are usually depicted as apolitical, helping to “unravel the political forces at work in environmental access, management, and transformation” (Robbins, 2011, p. 3). In doing so, political ecologists question and reframe established environmental narratives (Stott & Sullivan, 2000 in Robbins, 2011). For instance, in the context of forest restoration, the assumption that lands marked “degraded” are empty, or even degraded at all (for a detailed analysis of the social causes and consequences of land degradation, see Blaikie and Brookfield, 1987).

Political ecologists trace “chains of explanation” by seeking out the historical roots of environmental conflicts. Therefore, another related topic which I explore in this thesis is how cultivated and valued commons become categorized as “uncultivable” or “wastelands”; these land categories are often made synonymous with “degradation” despite de facto land use. I explore the relations between the state and forest-dwellers that produce these categories, how they are transmitted across scales, and their implications in the context of restoration. Oftentimes fixed categories, produced through inequal power relations where state and industrial interests override all else, serve to reify and institutionalize it further (Blaike and Brookfield, 1987; Robbins, 2001). And finally, given that land degradation is indeed a problem, one must also consider how communities can ensure lands requiring restoration are actually restored, according to communities’ understanding of degradation and restoration rather than the false “mechanical objectivity” of the forest bureaucracy (Robbins, 2001, pg, 161).

\(^5\) The term “Adivasi” refers to “original dwellers” which can roughly be translated to Indigenous. The other terms commonly used include Scheduled Tribes (ST) and tribals.
Analyzing historical processes, laws, institutions, assumptions, and discourses, political ecologists come to the conclusion that “unjust outcomes [are] the rule, rather than the exception” in environmental conflicts (Robbins, 2011). In particular, feminist political ecologists highlight that negative outcomes are distributed unevenly, disproportionately affecting “communities whose racial and cultural identities and land use practices are already subjugated” (Mollett & Kepe, 2018, p. 2). In my work, this is evidenced by the fact that it is marginalized forest-dweller communities, with precarious livelihoods, whose commons are targeted for state-led restoration due to their lack of tenure. Those in question are often Indigenous Adivasi communities, and among them, women. My thesis therefore explores evidence of Blaikie and Brookfield’s assertion that “land degradation is both a result of and a cause of social marginalization” (1987, p. 23) in the Adivasi hills of Odisha.

Given that FLR attempts to address both social and ecological outcomes, political ecology is ideally suited as an analytical approach. Scholars at research organizations such as the Center for International Forestry Research (CIFOR) have defined key questions about restoration governance that speak to political ecology (McLain et al., 2018). van Oosten (2013) also highlights that it is “not only how, what and where to restore, but also for whom landscapes are being restored” (p. 664) that should inform restoration policies and practices. In particular, the concept of green grabbing (Fairhead, Leach, & Scoones, 2012) responds to these questions by highlighting how land and resources are appropriated for environmental ends, particularly through “the technical management of local landscapes to produce both conservation areas and ‘nature[s] that capital can see’” (Robertson, 2006 in Huff & Brock, 2017). In rendering nature visible and legible to capital, it is ascribed monetary value, and “in assigning monetary values to natural systems, each one of which is unique in its own way, nature qua nature is allowed to disappear, leaving only various sets of numerical values” (Ghosh, 2017, p. 69).

In the context of restoration, green-grab analyses highlight how degraded lands become new frontiers of economic growth, coupling a “repair economy” to the “growth economy” without challenging the “regime of accumulation that produced the climate crisis in the first place” (Robbins, 2011, p. 249). Repair economies attribute speculative value to “waste” based on the
“assumption and imagery of degradation” (Huff & Brock, 2017) and intentions of “repair,” though these values are often based on metrics that do not take into consideration the lands’ existing economic, social, cultural, or spiritual value to local communities. Thus, whether “degraded’ refers to the loss of natural productivity, loss of biodiversity, loss of usefulness, or creating/shifting risk, the term is “perceptual” (Robbins, 2011, p. 107). Meanwhile, the overall justification of commercial tree plantations as “restoration,” particularly as offsets for destruction of natural forests, strongly calls into question the narrative of ecological repair.

Compensatory afforestation, which is described in further detail in Chapter 3, has already been analyzed from a political economy perspective in several studies (Ghosh, 2017; Saxena, 2019), as has India’s process of decentralization of forest governance (Gopalakrishnan, 2017; Kumar & Kerr, 2012; Kumar, Singh, & Kerr, 2015; Siripurapu, Mohanty, Kotamraju, & Geores, 2016). In general, these studies focus on the coloniality of forest governance in India; perverse incentives and poor implementation of safeguards and reforms; and the “maze of land laws” that characterizes India’s tenure-ambiguous, highly contested, and long-inhabited forests (Wahi, 2019). Compensatory afforestation, though a uniquely ambitious policy in deforestation accountability, is seen as highly flawed cash cow, even in the government’s own reports (CAG, 2013). Soumitra Ghosh summarizes: “No amount of structural changes and monitoring can set the process right—all available records, including our own field investigations, suggest that compensatory afforestation plantations are at best a green mirage, most of which were never meant to be raised in the first place” (2017, p. 74). This alludes to the fact that compensatory afforestation, while ostensibly a tree-planting project, is at its core a tree-cutting project; a natural forest being cut is behind each plantation that exists through this program. Compensatory afforestation (CA) therefore fits neatly within India’s “ease of business” agenda, which prioritizes industrial interests over all else. Overall, the policy appears to lack both communities’ and forests’ interests both at the site of deforestation and at the site of offsetting through plantations.

In addition to direct offsets, payments against the ecosystem services of cut forests (labeled Net Present Value [NPV], and totaling 50 years of payments-for-ecosystem-services), fund a variety
of forest agency endeavors, including additional afforestation and reforestation activities. In this thesis, I focus on the offset-specific plantations because they are monitored more transparently and are therefore more suitable to study. The processes of green grabbing seen in CA can be extrapolated to other state-led restoration projects given the common implementing agencies and techniques. In Chapter 6, I will also contextualize these industrial tree plantations within the broader history of plantation-style commodity production. This builds on work by scholars such as Anna Tsing (2016, 2015), Donna Haraway (2019), and Katherine McKittrick (2013) who have traced the history of plantations to the present through plantation logics such as simplification, replification, scalability, dispossession and alienation.

1.3 Research Context

As in many places around the world, the hills of Odisha are a place where forest biodiversity, Indigenous territories, and mineral-rich subsoils overlap. As in other places, this trifecta is a perfect recipe for conflict of interests between the state, industry, conservation lobby, CSOs, and local communities. Odisha is set to receive a large proportion of funds to offset deforestation in coming years, given that it is a national leader in mining and therefore one of the highest contributors to the Compensatory Afforestation Fund. The chief minister claims that the state is the country’s leader in CA (Press Trust of India, 2016). In the 2017-2018 Economic Survey Report, the state reports afforesting 35,124 hectares through CA between 2010-11 and 2016-17. Though CA is a small part of wider afforestation efforts (less than 5%; see Appendix 54: Additional

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6 According to the Ministry of Agriculture, about 32.98% of Odisha, or about 50,000 sq. km, is considered forest (including both recorded and unrecorded forest area). This includes 6,967 sq. km of very dense forest and 21,370 sq. km of moderately dense forest (India State of Forest Report 2017), with the remainder being ‘open forest’.

7 More than 60 Adivasi groups reside in Odisha, totaling more than 8 million people or about a quarter of the state’s total population. Of the 75 groups considered “PVTGs” across India, 13 are in Odisha, the highest concentration in any Indian state. For more information about PVTGs in Odisha and FRA, see Pattnaik (2017).

8 Odisha is the largest mineral producer in the country, with 10% of the nation’s total mineral production; Coal, bauxite, chromite, iron & manganese ore and limestone are the lion share of industries (Samata, Undated).

9 In Odisha in 2013, Dongria Kondh communities from Niyamgiri made history and international news by defeating Vedanta steel for a multibillion-dollar project to extract bauxite in their hills, using the spiritual and cultural significance of the mountain to “foil” the international investment valued at over $2 billion (Tatpati et al., 2016).

10 According to Economic Survey Report (2017-2018), from 2010/11-2017/18, Assisted Regeneration (plantations) were raised on 199,382.2 ha. Assisted Natural Regeneration with Gap Plantations were taken up on 435,760.9 ha and without Gap Plantations on 1,182,874 ha. Table reproduced in Appendix 54: Additional table.
CA plantations are distributed unevenly across the state. Regions with greater deforestation, usually for mining and dams, have more CA as the Forest Conservation Act (1980) encourages afforestation on lands closer to the original site of deforestation. In this thesis, I focus on one district with a historical concentration of plantations, Keonjhar, as well as one district that is a projected CA hotspot, Kalahandi. By linking these two sites in this study, my objective is to explore what strategies and lessons can be learned from previous plantations as new areas are rolled out. I also aim to contribute to the broader efforts to develop case studies of CA plantations, carried out by research and civil society organizations at the national level. Finally, given the massive scale of forest landscape restoration required to address climate concerns, lessons learned from state-led restoration in India may be relevant to broader FLR efforts, policies, and guidelines globally.

One of the leading organizations working on forest rights, Vasundhara, was founded by my supervisor Neera Singh. Through Vasundhara, I made connections with local organizations in Keonjhar and Kalahandi where I had found clusters of previous and planned plantations, and together we shortlisted potential study sites. To explore the impacts of CA in local communities and their responses, I studied the trajectories of plantations attempted, contested, raised, and cleared within different Adivasi territories. The first step was mapping historical plantations, to which I later added proposed plantations. I created a complementary plantation database of non-geospatial data, such as plantation size, proposed density, and land alienation, covering 345 past and future plantations and more than 21,000 ha. I used this data to understand trends in intensification of plantations across the state of Odisha, addressing my first research question about how democratization and restoration interface by cross-referencing spatial plantation data with spatial forest tenure reform data. This database became a tool of knowledge exchange

\[1\] In 2019, with the new CAF rules, this is set to change and states with more than 40% forest cover are allowed to outsource their CA to other states with lesser forest cover.

\[12\] Earning the trust of NGOs in Keonjhar and Kalahandi, where my fieldwork took place was not a given and I am grateful to the support of Vasundhara staff in helping me form those connections.
and place-based inquiry with local communities during my fieldwork in fall 2018, when I visited more than 20 plantation-affected villages.

In Chapter 2, I describe my methods in greater detail. In Chapters 3, 4, and 5, I respond to each of my three research questions, which focus on forest governance, impacts of compensatory afforestation, and the responses of communities and civil society respectively. I conclude and summarize findings in Chapter 6.
2 Research Methodology

2.1 Introduction

“When I practice visitation, I am not visiting you. I am visiting your children’s future homelands. I am their guest, not yours” (Tuck, 2018)

“When research is truly collaborative and participatory, the researcher must be willing to share control and ownership over the terms on which the research, and accompanying forms of giving back, are designed, conducted, and disseminated (Ospina et al. 2007; Sangtin Writers & Nagar, 2006 in Gupta & Kelly, 2014).

In whose name is a given research project done, using whose time and resources, and to whose benefit? At my previous organization, these were the questions with which my grassroots colleagues approached all proposed research projects. As I started my thesis, I was reminded of the conversations these questions provoked. Learning more about forest rights, compensatory afforestation, and community-led forest restoration, I began to understand the ecosystem of relationships between academia, CSOs, and communities that work on these topics. Keeping my positionality in mind, I tried to find openings where I could add value to others’ lines of action (for a detailed personal introduction, see Appendix 1: Personal Introduction).

Speaking to settler academics working with Indigenous communities, Unangax scholar Eve Tuck (2018) asks, “Does your theory [of change] hold space for human agency?” Often, she observes, researchers’ theories of change locate power outside of the community, and focus on damage: “In a damage-centered framework, pain and loss are documented in order to obtain particular political or material gains. In many ways, the underlying theory of change is borrowed from litigation discourse… testifying to damage so that persecutors will be forced to be accountable” (2009). Locating power outside of communities has “long-term repercussions [for Indigenous peoples] of thinking of ourselves as broken” (2009, emphasis added). Tuck’s perspective, and the feminist and queer feminist Indigenous theories of change she is currently documenting (2019), have deep implications for research projects like my Master’s thesis. They are also deeply personal for Indigenous scholars: “Damage narratives are the only stories told about me unless I am the one telling them,” Tuck shares (2019; Morrill & Tuck, 2016). The commitment of
Indigenous scholars, elders, and young people to decenter stories about damage, pain and loss by telling ones about human agency motivates me to do the same.

2.2 Training and preparation

My excitement about studying compensatory afforestation was spurred by the eGreenWatch monitoring database, which features official geospatial and quantitative data about plantations and other works undertaken with CAMPA funds. The data includes plantation-wise, project-wise, and district/state-wise reporting of financial and physical achievements, and is uploaded by forest officers at the divisional level. Using this data, I created an ArcGIS Story Map about compensatory afforestation for a grad school course with training from Dr. Kundan Kumar in visual analysis of satellite imagery (identifying pits, plantations, and shifting cultivation patches). This was part of a broader analysis of the same dataset by the network of scholars, practitioners and activists who collaborate under the banner of the Community Forest Rights Learning & Advocacy. Their typology included “ghost plantations,” forest rights violations, and failed plantations (see Appendix 5 or the StoryMap). Consistently, we found cases of plantations over shifting cultivation patches. Despite the limitations of satellite imagery, this method helped me identify potential sites.

Prior to my graduate studies, I lived in India for several years working with peasant movements on food sovereignty issues. When I set up base in Bhubaneswar, the capital of Odisha, I hit the ground running to learn about CA policies, civil society networks, and some basic Odia. I timed my August, 2018 arrival with a convention, the Odisha Vikas (Development) Conclave. Sessions on forest rights and self-governance provided an initial exposure to the who’s who of the forest rights space in Odisha and some of the non-profit/community dynamic, in Odia immersion mode. I consulted widely with people from different organizations using Vasundhara’s network.

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13 This database was scraped in 2018 by a team from the Indian School of Business.
14 The photo series’ quality, the weather, chronology, as well as the ambiguity of the content at time all affected how “photogenic” a particular site was. See Robbins (2001) for additional analysis of remote sensing and Indian commons.
15 I am grateful to Tushar Dash, Sanghamitra Dubey, Giri Rao for this training. Dr. Pramod from the American Institute of Indian Studies graciously dealt with my impatient enthusiasm for learning Odia and provided me textbooks to do so. Swapneswar helped me with GIS.
to strategize about how my research could fit into their goals. They briefed me on the extensive context of forest governance, compensatory afforestation, forest rights, and self-governance in Odisha.

2.2.1 Secondary data

I accessed the following databases before fieldwork to aggregate information about past and proposed plantations in Odisha.

- On the Forest Clearance website Parivesh, there is information about recently-proposed plantations, maps prepared by the user agency of the plantation sites, topographical maps with the plantations highlighted, and certificates of non-encumbrance and no-encroachment from the local administration. By overlaying these polygons and the eGreenWatch polygons, I could compare historical and proposed plantation clusters, which helped me identify sites.\(^{16}\)

- **Village maps and plot-level land records** prepared by the revenue department can be accessed online. For the purpose of this study, the most relevant land categories were those marked as belonging to the forest department and as wasteland (anabadi). Through the village map database, Bhulekh, one can also trace the transfers of land from the revenue department to the forest department for plantations, helping to map dispossession over time and space.

- **The Odisha Gazette** has a forest **section** of legal notifications on their website. Land alienations captured in the land records could be fleshed out through the Notification archives, if available. The notification includes village name, forest diversion project, land schedule, and the date of notification.

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\(^{16}\) Detailed data was available for those projects proposed after July 2014; the data for those before the transition to a digital system are not as plentiful.
2.3 Site selection

Before collecting data, I visited a few exemplar sites to better understand plantation impacts and responses from civil society mentors. Interactions with local communities taught me as much about field research methodology – from simple things like how to comfortably ask for consent and what time is the most appropriate to visit—as they did about the politics of afforestation in their communities. I also began to learn about advocacy strategies, such as filing petitions, raising issues with the National Commission of Human Rights, protest and mobilization.

After the initial field visits and networking meetings, I shortlisted about ten villages in Keonjhar and Kalahandi to visit based on my geospatial analysis of plantation clusters and inputs from the local team accompanying me in each place. In total, I visited more than twenty villages to ground-truth the geospatial data that I had from the Forest Clearance Website (proposed plantations) and e-Green Watch (past plantations) across two clusters in Keonjhar and one cluster in Kalahandi.

I used a plantation site (as opposed to a watershed, village, or administrative block) as my unit of analysis, collecting primary data in the field with my secondary data (often project/plantation-wise) as an anchor. I was fortunate to find one site that checked many of my requirements: the “Joda West-Golabandha Raidiha” plantation, as in official documents. It was carried out in two phases (2010 and 2018, suitable for a longitudinal study), inspired mobilization and resistance due to strong local leadership, and affected multiple villages. After several visits, the key community members I was interacting with expressed willingness for their village to feature in my research. I soon found out that materials from 2010 and 2018, such as greivances, Right to Information Act applications, and meeting minutes, were available through a local organization. A final bonus was that the mining company linked to this CA plantation has a proposal in process for another major wave of plantations across triple the area, making the Joda West-Goliabandha Raidiha plantation relevant to current advocacy efforts.
2.4 Building a method, a team, and a support network

Over time I developed a method for exchanging information with local communities. To visually communicate my data, I used Google Earth maps (where I otherwise stored and analyzed my data) as tools. I opened visits by updating community members about upcoming plantations, if any, and inquiring about past plantations. If this sparked interest, I would see who had time to dig deeper. Initially, meeting with a few key people to verify the secondary spatial and archival data was sufficient, followed with in-depth interviews, focus-group and discussion in village assemblies. My initial interview guides were developed based on literature review (Sahu, 2007; Mahakul, 2013; Mohanty, 1998; MacDougal, 1963). Over time, I improved the detail and completeness of these questionnaires (see Appendix 2: Survey). The interviews were open-ended conversations and I aimed for information saturation. Consent to interview was almost exclusively verbal.

In total, I was accompanied by seven different NGO workers, including four men and three women, from three different organizations. They each helped in my progressive onboarding based on their areas of expertise, including advocacy, food sovereignty, mining, forestry, local history, organizing, etcetera. We would usually hire a vehicle—sometimes a jeep and sometimes an autorickshaw—and the drivers would also end up as part of the team, helping to gather people and even interpreting. Relationships with the community were mediated by these research team members, with their own complex positionalities, involving as caste, class, gender (for further discussion, see chapter by Godbale in Lunn [2014]). When I use the term “we” in this thesis, it reflects this fluid research team and our collective complexity.

Language barriers are an example of a challenge our team adapted to. If I was the focal point of the interaction, my research team members would assist as liaison interpreters: I would speak in Hindi and the community members in Odia. As the other team members grew comfortable with the research flow, they would take more of a facilitation role, and I would listen to the Odia conversations, making suggestions and taking notes. In the evenings, we would sit and consolidate main takeaway points from that day, usually in the format of reports that would be disseminated back to their organizations, and which I would keep on file.
Overall, the enthusiasm and commitment of the research team members to the process as a whole (and my learning in particular) was irreplaceable. CSO leaders also responded with interest to the project and the implications of the data. For those who were interested in the methods, I shared technical methodologies; otherwise, I would hand over the data. Several CSO personnel became valuable mentors and thought partners, helping shortlist villages and recommending people from their team to accompany me to the field. These conversations were useful for me to both collect and share information, and ensure that my project was staying responsive and realistic given advocacy priorities.

2.4 Primary data collection

To collect information about village plantations, our research team would analyze case material with the participation of community members, including land records, maps of plantations, and satellite imagery. If initially communities seemed keen to continue the exchange, we would follow up with physical verification of the plantation sites and focus groups (I describe how social difference played a role in the focus groups later in this section). The goal of initial interactions with community members was to identify gaps in my secondary plantation data. To do so, usually on a second or third meeting, I would ask villagers to help me construct a village plantation timeline including the following details for each plantation: (1) project year; (2) plantation area; (3) species planted; (4) wages; (5) public opinion; (6) location – using village boundary of shifting cultivation patch as a landmark; (7) any remaining indicators, such as presence of a signboard/fence (see Image 1 and Image 2). I would then refer to this timeline for the rest of my interactions with the community.

 Conversations about how many of the village plots ended up in the forest department’s name would lead to broader conversations about compensatory afforestation and the political economy of forest governance. This was supplemented with close collective readings of the

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17 Most of the time the land records weren’t actually in the hands of everyone in the village and so by bringing the land records as a medium of knowledge exchange our team was able to support their access to important information.
18 Bikash Rath’s (2005) report on plantations in Juangpirh inspired this method, which established certain village-level facts to build on.
satellite imagery, using landmarks like nurseries and water tanks. Young people often took a special interest while women observed from the sidelines. Often when people were describing plantations in their village one of my research team members would suggest, “Would you show us?” Someone would usually find time to walk us to the site (though they often expressed doubt over whether we were fit enough to reach in one piece). I went on seven or eight such walks in different villages, mostly with women. After a few hours, we would always return back to the village with some firewood in hand.

On these walks, we would see plantations at many stages in the plantation life cycle. I would track which species had been planted and the infrastructure around the plantation, such as the nursery, tanks, and fencing. I would also look for plantation signage, which would usually inspire the walk in the first place. At the plantation site, depending on its status, I would have conversations with the guides to understand more about the historical land use, plantation, impacts on households, and forest rights. We would take pictures, GPS points for different landmarks, and in general listen to their memories about the place, if they were forthcoming with them. I would ask questions multiple times to make sure I understood correctly, especially when I was attempting to speak Odia.

Most of the data from my fieldwork resided in maps. Whenever we were traveling, I would take notes into the Galileo app, dropping points with annotations. We closely observed signboards and pillars and marked them in my maps, along with local names for places, individual plots, and GPS data collected while trekking to the edge of plantations to get a complete polygon (see Image 1 and Image 2). This helped me develop an understanding for the land, or “feeling the land”, which I observed changing in myself over time (For field notes about this please see Appendix 43: Field Notes, Feeling the Land).
Table 1: Field work objectives matrix

<table>
<thead>
<tr>
<th>Objective</th>
<th>People involved</th>
<th>Tools and Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal description of village boundaries and plantation timeline</td>
<td>One or two key informants</td>
<td>Google Earth Map (with prepared points), Topographical maps, revenue land records, e-green watch data of previous plantations and forest clearance data of proposed plantations</td>
</tr>
<tr>
<td>Accompanied territory walk (to plantation), to collect and validate spatial data and share experiences</td>
<td>Three or four informants</td>
<td>GPS App for smartphone, camera, google earth, maps mentioned above</td>
</tr>
<tr>
<td>Understand podu cultivation system, cultural practices related to agriculture</td>
<td>Either a village assembly or interviews with informants</td>
<td>Peer-reviewed and grey literature, conversations with civil society actors</td>
</tr>
<tr>
<td>Livelihood analysis and plantation impact</td>
<td>Either a village assembly or interviews with informants</td>
<td>Ten-stones activity (see 5.6 Livelihood Impacts in Tala Raidiha)</td>
</tr>
<tr>
<td>Understanding the policy and legal implications of CA</td>
<td>Interviews with government officials and lawyers</td>
<td>Acts/guidelines to refer to, cases from the forest clearance process or from e-GW, photos and presentations as possible and required</td>
</tr>
<tr>
<td>Understanding specifically the gendered impacts of CA</td>
<td>Women-only interviews</td>
<td>Ten-stones activity, field visits specifically to meet women</td>
</tr>
</tbody>
</table>

In total, I held more than twenty focus groups in villages in Keonjhar and Kalahandi, taking place for between 30 minutes and 2 hours, in a public space like a majang, temple, or school. It was a challenge to ensure women’s active contribution unless they were already well-organized, vocal, or in the majority. When our research team was all-women, which happened on about half of the visits, it would be easier to create spaces where women felt comfortable speaking in front of male community members. In my core case study villages, men were more likely to volunteer their time to discuss maps and walk to plantation sites. I balanced this by purposefully seeking
out women, sitting on a family’s verandah while people came in and out, participating in household tasks and chatting. Sometimes these conversations involved multiple generations of women. It was not possible to create exclusively women's space and my data still has a male bias. However, this was not due to lack of trying and at times succeeding to get women’s perspectives in my analysis.

A majority of informants in the key case studies were male elders, though some young people were also interviewed. In several villages, the sarpanch and other village leaders were quite young. I also met with pidha-level political leaders of the communities to ask for inputs on the research project and hear their experiences. I also informally spoke to a few government representatives from the forest and tribal departments. One of the more sensitive issues that I was less equipped to understand was the caste dynamics between Dalits and Adivasis in the villages. Dalits, while oppressed in the context of the caste system, hold power in Adivasi villages. Particularly in mixed villages in Thuamul Rampur, non-Adivasis would be an active (and at times dominant) presence in focus groups and interactions. This was due in part to their interest about the applicability of the Forest Rights Act to non-Adivasi “other forest dwellers.” In Keonjhar, other communities, such as Goudas, were elites but did not participate in the research project. My research team members demystified these dynamics and managed them to the best of their abilities.

2.4.1 Additional secondary data

One of the organizations that was working in Keonjhar maintained an archive of petitions, grievances, and reports regarding mobilizations in 2008 and 2010. This archive was mostly in Odia so I made a copy and worked with a translator to understand and analyze it. She would helpfully point out which content was likely drafted by NGO workers rather than Adivasi signatories. This archive revealed the finer details of what had happened nearly a decade before, forming an important part of the case study.

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19 Perhaps because of high unemployment, many (male) youth had time on their hands.
2.5 Data Analysis

I transcribed and translated interviews that were in Hindi, requesting clarifications and support with Odia from the same translator. I also requested her help for translating archives from Odia to English. I coded this qualitative data along themes such as livelihoods (specific to podu, grazing, festivals, etc), plantation conflicts, and plantation impacts. I paid attention to ensuring women’s opinions were foregrounded in the process. I also cleaned the geospatial data collected in the field and used both the geospatial and qualitative data to understand the plantation history in my study sites. I added to my village-wise case files, performing a plot-wise analysis (Kumar and Kerr, 2013) on plantation areas using data from land records, plantation records, FRA, and interview/focus group data.

2.6 Reporting back

I had the privilege of reporting back to communities at both field sites about my research. In both instances, local organizations convened a one or two-day workshop about compensatory afforestation and livelihoods for community members and NGO workers. I also presented my findings to organizations working at the state level. The content in these presentations was geared towards the audience and it was a good exercise to think about local relevance of my work and methodologies for ensuring my data’s use-value. I also designed and piloted a two-hour training for interested Adivasi youth and NGO workers on Google Earth, Bhulekh, and plantation datasets.

2.7 Relationality in the research context

Feminist scholars have highlighted that the knowledge that one produces is inseparable from one’s positionality (Haraway 1988). They have emphasized the importance of reflexivity about one’s positionality (England, 1994), and the limitations of being fully transparent and reflexive (Rose, 1997). Because I was researching topics that are at their root political, I was especially conscious of the potential negative impacts of my visibility to organizations already negotiating tenuous relationships with the state. Additionally, wanting my research to be useful, I wondered
whether and how that would be possible. Was it ethical for me to deviate the time and energy of grassroots workers to this project? Were the intellectual diversions that are interesting to me as a scholar distracting me from concrete, useful work? Moreover, am I the right person to be doing this research project? Am I concentrating knowledge and information that should be managed democratically? Who should be compensated and how? How can I create spaces of learning exchange that are as horizontal as possible with such complex dynamics at play? The root of these questions was: what does solidarity look like in academic work?

In a recent edited volume (Lunn, 2014), *Fieldwork in the Global South: Ethical challenges and dilemmas*, many contributors speak to aspects of researcher positionality and ethical dilemmas specific to fieldwork in India. An essential part of my positionality and experience in India, whiteness, also finds its way into the book in a chapter Lunn co-authors with Rinita Dam. Dam and Lunn compare their experiences as researchers from Global North institutions doing work in India, both ultimately adapting their methodologies based on people’s responsiveness to their research. Lunn reflects on how she benefits from white privilege in India context, while Dam, by comparison, was perceived as not sufficiently “foreign” to access high-level officials as a South Asian and Bengali-speaking British woman. Much of Lunn and Dam’s reflection focuses on whether identities should be deliberately manipulated by researchers. They write that Lunn “did not try to downplay this aspect of her identity [whiteness and foreignness] because it proved useful for the research in terms of gaining access to elite members of society, entering circles of trust, and extracting information. This capitalization on her postcolonial positionality could be viewed as perpetuating the privileged and exploitative relationship so characteristic of colonial relationships” (p. 105).

Their ultimate conclusion that Lunn taking advantage of her whiteness for the sake of her research project did “no harm” differs with my personal approach, though I suppose I adopted this perspective in accessing certain bureaucrats. My biggest strength in controlling for missteps as a result of my positionality was my research team, and maintaining communication with them about what I could do better. At the same time none of my mentors were Juang nor my research

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20 Many questions resonate with Participatory Action Research, for example Wakeford & Rodriguez, 2018, p. 45.
team members (though one spoke Juang). The dynamics between Adivasis and non-Adivasis were often complex and out of my hands, though I felt accountable to, using Lunn and Dam’s phrase, “do no harm.” It was a learning process to work as a cross-cultural team with multiple goals as we attempted to manifest our commitment to community buy-in, consent, and agency through the research project.
Image 1: Plantation Markers

Image 2: Plantation Signboards
3 Forest Governance

In the fall of 2017, I was riding a bus through Mudumalai Tiger Reserve in Tamil Nadu, close to the Karnataka border, when my friend Sobha pointed out the window: “This is all a reserve forest.” I knew that the declaration of Mudumalai as a Tiger Reserve was controversial (Taghioff and Menon, 2010), but the forest itself looked fairly unassuming -- a change in scenery from the residential neighborhoods in the nearby city where I lived. “It’s not a ‘natural’ forest,” she explained. “All of these trees were planted by the Britishers. They aren’t indigenous species. Look carefully.” As she pointed out the species one by one, I began to see the forest for the trees. These forested landscapes-- required to be so “inviolate” that Sobha’s fellow Adivasis living in the Tiger Reserve core zone couldn’t legally plant a vegetable garden--were themselves planted. Remote sensing data would show them as medium dense or dense forests. On carbon markets, they would be valued as carbon sinks. But on the ground, as their large teak leaves fell and blocked the soil from sunlight, they left both indigenous species and Indigenous peoples without much room for growth.

In Mudumalai Tiger Reserve, communities are now working towards recognition of their customary forest rights through the Forest Rights Act (2006). This national law is an example of the larger “global tenure transition” (Sunderlin, 2011), or the shift from state forest governance to decentralized, community-based governance. This process is important given that Indigenous and local communities hold an estimated 65% of the world’s land (RRI, 2015). Still, rights on paper do not always materialize as rights in practice: beyond devolution, democratization of forest governance is key. Kumar, et al. (2015) follow Ribot (2002) by suggesting that “in contrast to mere deconcentration of power or decentralization of authority and transfer of limited powers to lower-level governance units, democratic decentralization leads to transfer of meaningful powers to locally accountable bodies” (p. 1).

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21 At the same time, Lele and Menon are careful to point out that “undemocratic behavior is not the exclusive reserve of the bureaucracy,” arguing that “if you leave forests to any one beneficiary group alone, whether the global wildlife conservation community or the local firewood user, would be likely to jeopardize the legitimate stakes of others” (2014, p. 405).
In this chapter, I trace how trends in democratization and decentralization of forest governance intersect with the restoration agenda in general and compensatory afforestation in particular. The Forest Rights Act (2006) and its potential as a democratizing force to reshape forest governance in India contextualizes initiatives like compensatory afforestation, which have tended to remain top-down and technocratic. I first summarize the policies, institutions, and land categorization frameworks applicable to compensatory afforestation, and provide a summary of the policy. I then cover the history of forest governance in India, with a focus on recent trends towards democratization through the FRA. I close by analyzing a few indicators of state responsiveness to local concerns, including plantation models, species selection, community involvement, and land banking.

Overall, Forest Landscape Restoration has the potential to harmonize with the broader forest tenure transition given its social-impact commitments (for a detailed analysis, see McLain, Lawry, Guariguata, and Reed, 2018). FLR’s recognition of local stakeholders appreciates that while the present-day restoration mandate may be novel, the practice of restoration is not. This marks a historic shift away from top-down restoration efforts that focused on watershed, desertification, green belts, rehabilitation of “wastelands,” and payment for ecosystem services (van Oosten, 2013, p. 121). Scholars have highlighted that finding synergies between ongoing restoration practices, with elements of democratic decentralization such as downward accountability and democratic inclusion (Ribot, 2002) will be key given the global scale of restoration: “If global initiatives such as the Bonn Challenge are able to pick up [local] initiatives, and scale them up through the construction of learning networks within and between landscapes, they may be able to strengthen locally evolved institutions and multi-stakeholder governance processes at landscape level, to truly reconcile global concerns with local interests” (van Oosten 2013, p. 120).

As I will show in this chapter, the potential for democratic forest restoration governance is constrained by the willingness and ability of states to turn this policy transition into practice. The slow implementation of forest tenure characterizes the responsiveness of the forest bureaucracy and other nodal agencies to the rights agenda and social justice reforms (for more on this in the
Indian context, see Kumar, Singh, and Rao, 2017). Well-funded restoration programs may be seen as a vehicle not only to restore forests, but to restore financial and territorial power to a forest bureaucracy pressured to devolve power to local communities.

3.1 Compensatory afforestation policy and actors

Globally, the word forest has more than 1,500 documented definitions (Lund, 2012 in Chao, 2012). Some scholars argue that a universal definition for forest is untenable (Newton, Miller, Byenkya, & Agrawal, 2016; Fisher, Srimongkongtip, & Veer, 1997). In the Indian legal context, the word “forest” refers to any land notified as Forest in government documents as well as any land that fits the dictionary definition of forest (T.N. Godavarman Thirumulkpad Vs Union of India & Ors., 1996). In practice, lands classified as Forest and under the purview of the Forest Department span from snow-capped mountains to salt flats, though most are woodlands and grasslands. In Odisha, almost a third of the state is under forest cover. Unlike many other states in India, the revenue department also administers forest lands; both the revenue and forest department are important actors in my research.

When forests on any category of land are cut for an industrial or development project, the project proponent needs a clearance from the federal Ministry of Forests, Environment, and Climate Change (MOEFCC) as per the Forest Conservation Act (1980). Forest clearance is contingent on several requirements (see Figure 13 in Appendix 5 for illustration). First, the proponent must prove that they have access to adequate land to meet the compensatory afforestation requirement. This requires documentation, including joint verification certificates from the forest and revenue departments that proposed sites are “free of encroachment and encumbrances” and ecologically “suitable for plantation.” After proposal approval by the Forest Advisory Committee (FAC), which can take many years, project proponents can convert their in-principle, Stage-I clearance to a final, Stage-II clearance by making payments and clearing outstanding fines. Payments are calculated on the basis of two factors: the Net Present Value

22 According to the Ministry of Agriculture, about 32.98% of Odisha, or about 50,000 sq. km, is considered forest (including both recorded and unrecorded forest area). This includes 6,967 sq. km of very dense forest and 21,370 sq. km of moderately dense forest (India State of Forest Report, 2017), with the remainder being ‘open forest’.
(NPV) of the forest loss based on fifty years of its ecosystem services, and the cost of compensatory afforestation on the proposed plantation site. It is only after these payments are received and disbursed to the local forest department that CA begins on the ground, years after site selection, and often to the surprise of local communities.

The Forest Conservation Act (1980) legislates how “equivalency” between forest loss and compensatory afforestation is calculated. This includes factors such as whether the proposed site is non-forest revenue land, forest revenue land, or degraded forest land. To ensure compensation for loss of forest land, the first preference is for non-forest revenue lands, followed by revenue forests and with degraded forest lands being the last resort. On non-forest revenue lands, often officially labeled “wastelands,” one hectare of afforestation compensates for one hectare of deforestation. However, proponents are required to acquire double the area of land if it is degraded forest land. To meet their targets, projects often combine multiple land categories and balance dense block plantations with “assisted natural regeneration” to achieve the required 1000 saplings per hectare.

In the case of non-forest revenue land, the focus of my study, the revenue department oversees the identification and transfer of lands for CA. To facilitate this process and ensure availability of land for CA does not become a bottleneck in the broader forest clearance process, in Odisha the revenue departments have been directed to establish compensatory afforestation land banks. This process of aggregating parcels of land in a “bank” for “development” is also underway for an industrial landbank (see the Invest Odisha website for more information). In theory, local claims on the forests/lands for afforestation ought to be taken into consideration in this process, though, as this thesis shows, there are gaps. Most of the lands identified for CA in Odisha fall into the category of Abad Ajogya Anabadi, or “uncultivable wasteland,” and local uses are not recognized. In this study, I refer to this land interchangeably as non-forest revenue lands, anabadi lands, and “wasteland.” In the context of this research, the most important characteristic to note about anabadi lands is that this category includes shifting cultivation land and lands labeled “uncultivable” are often thriving under cultivation practices that State refuses to see as valid forms of agriculture.
3.2 A brief history of forest governance in India

Like most other nation states with colonial histories, most of the forests in India are state-owned, aiding capital accumulation as well as conservation and development. In India, this process has been well-documented (Gadgil and Guha, 1993; Kumar & Kerr, 2012; Sarin, 2005). Local communities have been living autonomously on commons now owned by the state for generations, practicing livelihoods and cultural systems that reflect intimate relationships with their forested territories. Sivaramakrishnan notes that across colonial Bengal, surveyors encountered a “bewildering variation of arrangements by which local landowners, tenants, and peasantry used forests, acknowledged rights, and adjusted competing claims on them” (p. 136). This includes relationships between feudal principalities and Adivasi communities, who were labeled by the British as “scheduled tribes.” For example, in Juangpirh, my case study site, the pradhan or local leader was a title-holder on behalf of the village and was responsible for collecting revenue and liaising with the state (Nanda, 2001). Villagers paid co-shares and supplemented with free seasonal labor (bethi system, which became a flashpoint in two Adivasi uprisings in Keonjhar). Every seven years their pattas or titles would be renewed, which established their rights to shifting cultivation and collection of forest produce (Mahakul, 2013).

Customary agroforestry practices meant that upon the arrival of the British, Sivaramakrishnan notes, forests were rarely as dense or “wild” as the colonizers expected. Instead, they found “agro-forestry complexes in what was earlier envisioned as a timber mine” (p. 125). Over time, the British curbed feudal kings’ freedom and occupied management and ownership roles to create more discernable areas of cultivation, wastes, and forests (p. 45). In the legal processes of expropriating the freshly differentiated “forests”, customary rights were often conveniently ignored and traditional practices such as shifting cultivation were illegalized and condemned. Forest communities resisted the resulting displacement and dispossession, waging more than one hundred uprisings against the British over the course of their colonial rule, and in some cases, winning gains (Padel, 2009). Two main processes—the enclosure of reserved forests, and survey and settlement—resulted in widescale deterritorialization of forest communities and represented the violation of Adivasis’ rights (even within the draconian colonial legal
framework). The following two sections explore these two processes, and a third explains how these processes affected (and continue to affect) shifting cultivation practices (for a detailed analysis of territorialization and deterritorialization in Odisha, see Kumar and Kerr [2012]).

3.2.1 Notification of Reserved Forests

Under the British, more than 20 million hectares of land were notified as reserve forests across India (Stebbing, 1926 in Saxena 1997). Many of these declarations were in violation of law which required settlement of forest-dwellers’ rights (Forest Acts of 1865 and 1978). In most parts of India, this corresponded with a ban on shifting cultivation. However, in Odisha, the category of “protected forests” or “deemed to be notified Reserved Forests” were left under the management of the revenue department. This was the case in Keonjhar, due to the progressive position of the king. Despite the harsh regulations of the colonial landlords, Sivaramakrishnan characterizes forests as legal “zones of anomaly” where laws were more porous (1999, p. 105). Administrators recognized the forest-dependency of the communities and their traditional uses, and moreover they wanted to avoid what they perceived to be risks of “rebellion, raids, robbery, and murder” from dissatisfied, recalcitrant subjects (Sen, 2017, p. 176).

3.2.2 Survey and Settlement

The second process of deterritorialization took place from the early 1800s onwards when revenue departments produced cadastral maps and settled individual land holdings to streamline taxation. This process, *survey and settlement*, started in the plains and was based on the principle of individual property rights. Due to inability of the State to “see” complex and overlapping rights regimes (Scott, 1999), traditional practices of communal ownership were kept out of the formal survey and settlement process, though they continued to exist and were a source of conflict and contestation that have continued to the present. Sivaramakrishnan writes that surveys often combined mapping and description with the collection of oral histories: “This is where the negotiation of space occurred. Collective local memory, the repository of substantialized boundaries, was drawn upon in these surveys, then reinterpreted and effaced” (p. 121). Also, as is well-known, the aim of survey and settlement processes was to fix individuals
and communities in a place for the ease of revenue collection. Relatively more productive fertile plains lands were therefore targeted first and the hills much later. For example, in the Adivasi areas of Keonjhar, survey and settlement occurred only in 1967 though it began in the plains in 1803. One reason for this delay was resistance from the communities themselves. And the other was the challenge that the administrators faced in reaching remote villages in good health (Kumar and Kerr, 2013).

3.2.3 Deterritorialization and the podu commons in Keonjhar, Odisha

Most communal lands were shifting cultivation territories. In the case of Keonjhar, they were labeled “uncultivable wastelands”. This occurred through the arbitrary application of a “10 degree-gradient rule”, which meant that only those lands which were flat or slightly inclined would be settled, and the rest would be considered uncultivable (Kumar and Kerr, 2013; Kumar, et al, 2005; Rath, 2005). It was also argued that shifting cultivation lands failed to meet the settlement requirement of twelve years of continuous occupation. To this day, survey and settlement is pending over large amounts of Odisha’s land area though it should take place every twenty years, according to law. Forest Rights Act (2006) enters this scene given the broader failure of the government to recognize rights through these already-existing frameworks, though on paper, rights are recognized.

3.4 Forest Tenure Reforms in India

Postcolonial land reforms around the world often focused on settling feudal landholdings with landless peasants (“Land to the tiller”); however, in the case of forest lands, most postcolonial governments remained the landlord (Kelly and Peluso, 2014). Government control was more deeply entrenched with the ascendancy of the conservation agenda. Core drivers of deforestation such as timber extraction, diversion of forest lands for industries, agriculture and mega-infrastructures such as dams and roads, continued unimpeded in the name of the so-called national interest. This led to degradation of forests as well as marginalization of forest dwellers. Large scale mobilizations such as the anti-dam Narmada Bachao Andolan characterized this era (from the 1980s onwards), resisting displacement and fighting for fair resettlement.
policies. International acceptance of the moral imperative to recognize the human rights of Indigenous peoples, for instance through the UN Declaration on Rights of Indigenous Peoples, was conveniently rendered unapplicable to India by the Indian government by declaring all Indians as Indigenous (for detailed analysis see Bijoy, 2018; IWGIA, undated.).

India took up the mantle of forest conservation, passing the 1980 Forest Conservation Act as well as a conservation-focused 1988 National Forest Policy. Two contradictory trends mark recent forest governance in India. On the one hand, there has been an emphasis on conservation and protection of biodiversity and wildlife, sidling community interests in pursuit of “inviolate” wilderness; this method is termed by critics as “fortress conservation” (Doolittle, 2007). On the other hand, there has been, at least in rhetoric, emphasis on local needs and rights. While the Forest Conservation Act (1980) made diversion of forest lands for non-forestry purpose difficult and the Wildlife Protection Act (1972) sought to expand Protected Areas for wildlife conservation, the National Forest Policy of 1988 emphasized local needs and local participation in forest management. Starting from social forestry projects in the late 1970s and early 1980s and thereafter the Joint Forest Management (JFM) programs in the 1990s, there has been emphasis on local participation and on decentralization of forest governance.

Commentators have critiqued these decentralization efforts as being half-hearted and tokenistic rather than leading to meaningful recognition of forest dwellers’ political power (Sarin et al., 2004; Sundar, 2001). A major turning point came in 2002 when the Ministry of Environment and Forests issued a guideline that was interpreted by forest officers as an eviction order for those “encroaching” state forest lands. Mass mobilizations and public campaigns as well as a concerted civil society effort opened a pathway towards forest tenure reform given this political threat (for a detailed history, see Kumar & Kerr, 2012). In 2006, India’s landmark Recognition of Forest Rights (FRA) Act was enacted to recognize rights vested with Adivasis and other forest dwellers. It specifically mentions an attempt to “address historical injustices” and provides a framework for recognition of both individual and community rights.
3.5 CA in the context of forest democratization

Compensatory afforestation is perceived by civil society and communities as a step in the opposite direction. In 2013, the Comptroller and Auditor General of India released a scathing report investigating the policy’s implementation. The report included evidence of unacceptable plantation survival rates, unmet offset objectives, and rampant financial mismanagement. This came in the context of hardline conservationists and retired forest officers challenging the program on similar lines, and led to the passage of a new law – the Compensatory Afforestation Fund Act, 2016.

Forest rights advocates challenge the centralization of offset payments with the forest department for their discretionary, especially given that the fund is more than seven billion dollars. In contrast with the Forest Rights Act (2006), CA concentrates additional financial and territorial power with forest bureaucracy23 by sidelining the role of the grama sabha (village assembly). As per the FRA, grama sabhas are empowered to manage their own community-based conservation programs (Kukreti, 2018), though as they remain wholly unfunded to do so. Current CA practices deny communities the opportunity to use their community forest rights (CFRs) to their fullest conservation potential24 and creates competing interests on parcels of land which could be claimed under FRA. Moreover, restoration could employ millions of underemployed rural workers, particularly youth, and state-led restoration misses this opportunity to meaningfully contribute to rural revitalization (Neera Singh, personal communication, 8/26/19).

Though this thesis explores the implications of CA against a rights-sensitive FLR framework, it is important to note that CA does not appear to be successful even on its own conservation-centric terms. This has implications for India’s ability to meet its Bonn challenge commitment to afforest 21 million ha of degraded and deforested lands by 2030. Moreover, the over-reliance on industrial tree plantations as a solution to land degradation reflects bad-faith implementation of

23 The main institutional apparatus of the CA policy is the Compensatory Afforestation Management and Planning Authority, which manages all funds and CA payments at the central level (federal level).
24 While individual forest rights recognize household plots, CFRs recognize communities’ agency as stewards of their lands, honoring the legacy of village forest protection in Odisha and other states.
the policy, particularly given that since the 1988 National Forest Policy commercial plantations have been discouraged. A citizen query in the Rajya Sabha (Upper Chamber of India’s Parliament) forced the Minister of Environment, Forests and Climate Change to defend the use of plantations and define whether they are substantively different than forests. The Minister responded that indeed plantations are not forests, but that for the nation’s development some compromises are required (Rajya Sabha Question #39, April 4, 2016).

As in other parts of the Global South, communities have strongly denounced and responded to commercial tree plantations (for a detailed analysis, see Gerber, 2011). Globally, mobilizations have particularly focused on the harm of eucalyptus, which is no longer being planted in India by the government (private paper pulp companies continue to contract eucalyptus plantations). Land Conflict Watch, an award-winning collective of Indian journalists and researchers, has reported 51 cases of conflicts over compensatory afforestation as of September 23, 2019. Community complaints include encroachment of parcels with recognized Individual Forest Rights, displacement without grama sabha consent or consultation, inaccessibility of Community Forest Rights-recognized lands, and encroachment on lands traditionally recognized as commons (with forest rights claims pending). According to Land Conflict Watch, these 51 conflicts across the country have affected 58,462 people on 124,961 hectares of land. Given that CA is one portion of a much larger suite of afforestation and restoration programmes, these numbers reflect how communities likely to be threatened by climate change also appear to be threatened by climate change mitigation.

In Odisha, communities emphasize that teak plantations provide “no food, no fodder” and are “utterly useless” unlike ordinary forests and regenerating fallows which offer fuelwood, fruits, roots, tubers, leafy greens, seeds, and other forest products (Focus groups, 2018). Forest departments have tried to transition away from the traditional block plantation, which contains 1600 plants per hectare, in favor of Assisted Natural Regeneration with Gap Plantation. This method involves sporadically planting saplings over a large area forested area, with block plantations in “gaps” (often fallows). Even though the model appears less intensive at face value, lower density plantations require more area to meet the same targets, meaning total land grab is
greater. Sporadic planting is also difficult to monitor on satellite imagery, and therefore more vulnerable to perverse incentives leading to poor implementation.

3.5.1 Why plantations?

The conflict over industrial tree plantations leaves a few questions unanswered. If plantations on state land are so contentious, why do they form the backbone of restoration strategies? What do these conflicts reveal about how the state relates to forest communities? How can the government continue to justify plantations as “offsetting” for the loss of dense forests?

In forestry science, simplification for ease of governance has always been a priority, with early techniques focusing on the cultivation of same-age trees and linear alleys with no underbrush to make harvesting and planting more “routine” (Scott, 1999, p. 18). According to Scott (1999), this attempt to simplify forests materially was reinforced by theories of management, commodification, surveillance, aesthetics, and scientific study in the interest of timber extraction. Sivaramakrishnan describes how in colonial Bengal “teak planting was undertaken to introduce both order and industry in wastelands” (p. 81). Yet the plantations often failed, limited by what the British perceived as lack of local “meticulousness and scientific approach considered necessary” (p. 110) (perhaps “everyday resistance” to the disciplining of people and nature attempted through early teak plantations [Scott, 1985]).

The logics of historical plantations, summarized by Davis, et al. (2019) as “environmental modernization, homogeneity, and control,” persist in myriad contemporary production systems. It is therefore no surprise that industrial tree plantations emerge as a core strategy for restoration, despite their ecological and social shortcomings. Anna Tsing, Donna Haraway, and others have brought the plantation into the discourse of climate emergency by pointing out the continuity between our current crisis and plantation logics of simplification, homogenization, and alienation (Tsing, 2016). Initially inspired by a colleague’s work on oil palm plantations during a panel discussion, Tsing and Haraway have both contributed to developing a riff on the Anthropocene—the “Plantationocene”-- in broader conversations on the climate crisis (Haraway, Ishikawa, Gilbert, Olwing, Tsing, & Bubandt, 2016). Work linking climate and plantations is an
opportunity to connect with work by scholars in Black geographies, such as Katherine McKittrick and Clyde Woods, who have studied the persistence of historical racialized plantation logics in the present in mass incarceration and policing, and also in systems like fortress conservation and special economic zones (Woods, 2007; McKittrick, 2013). It also marks an opportunity to center communities’ resistance to plantations and to recognize and honor the “patches of liveability” that persist around them (Tsing, 2016). This resistance can be seen in early African-American communities’ gardens on the plantation (Wynter, 1971); to resistance to banana plantations in the Philippines (Paredes, 2019); to ‘counter-plantations’ (Casimir, 2010) of autonomy struggles in Haiti; to Mien communities harvesting matsutake mushrooms in Oregon (Tsing, 2015): the rebellious flourishing along what Tsing calls plantations’ ‘unruly edges.’ In the conclusion chapter, I return to these themes and bring the plantation mode of restoration into the conversation on the Plantationocene.

3.5.2 Plantations on Podu Landscapes

Shifting or swidden cultivation is locally referred to as podu and toila (and jhum in other parts of India). According to Sahu, in his ethnography of Juang communities in Keonjhar, “Toila cultivation is at the heart of the Hill Juang economy as well as their rites. Ritual and moral order are attached to it” (2007, p. 223). It is also part of their origin story (McDougal 1964, p. 47). Shifting cultivation systems are sophisticated, biodiverse, forest regenerative, and moreover podu’s “role in deforestation is minuscule as compared to conversion of forests to permanent agriculture, plantations, and pastures” (Kumar, 2014, p. 301). This contradicts the dominant narrative about podu, which was described by colonial foresters as a “pernicious” and “evil” practice because of perceived detriment on forest cover and water catchment. Since the 1970s, a variety of “podu prevention” schemes and policies have been rolled out to replace podu livelihoods due to a concern about degraded forest lands (Panda, 1999). Besides “carrot” approaches like work-for-food and horticulture, the “stick” has often been commercial tree plantations on podu patches in the name of fixing broken landscapes.
As part of the forest clearance process, divisional forest departments prepare site-specific Compensatory Afforestation Schemes for proposed plantation sites. These lengthy documents include information about how the forest department plans to restock, maintain, demarcate, fence, protect, and check soil erosion/run-off on the lands they acquire for plantation, as well as information about site-specific ecology and its de facto land use. These plans, which are evidently boilerplate text as much of the content is standardized, support communities’ suspicion that CA plantations are used by the forest department as a vehicle to prevent and target podu. In the text, the forest department makes explicit the practice of planting CA trees directly on podu patches by describing proposed plantation sites as “conspicuously” cultivated, “subjected to podu cultivation” and as “podu-ravaged.” They simultaneously note that these sites are “free of encroachment and encumberance,” marking a core contradiction in how the state sees commons-based livelihoods.

In the CA schemes, the FD proposes different plantation models for podu lands and non-podu lands. Non-podu lands are to be planted unsystematically in the style of Assisted Natural Regeneration, while podu patches will receive 2.5x2.5 m spacing (indicative of a block plantation). To avoid “biotic interference” of grazing, the CA scheme also mentions that “non-browsable species” will be planted around the edges, such as teak. There is recognition that plantations will endanger podu livelihoods, with the proposed solution being indigenous fruit species which can be used by Adivasis “for their livelihood and socio-economic upliftment” (undated, p. 143). Further plans to build communities’ economic resilience include supplying them with livestock (goat, sheep, chicks) and associating the project with the forest department-controlled VSS. The plan’s author frames this as a way of inspiring the villagers to see how the plantation benefits them, though it is clear that tribal economic empowerment is relevant to the forest department’s goals insofar as it leads to reduced podu, leaving the plantation “safe” from being cleared and planted over. In the CA Scheme in question, the plantation budget has no funding whatsoever for these social programs, instead allocating more than 50% of the 650,000

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25 There are three schemes for CA projects in Thuamul Rampur uploaded to the forest clearance website, all based on the same template with much of their text standardized.
USD budget to a 31 km barbed-wire fence around the entire area. The only formal involvement of villagers in the budget is as laborers.\textsuperscript{26} 

The CA scheme also misrepresents public opinion and engagement. According to the schemes for each village, locals are “very much interested in rehabilitation of degraded forest to reap the usufructs & to meet their social, cultural, and economic needs” (DFO Keonjhar, undated, pg. 140). This is clearly a boilerplate text, further underscored by the proposal’s incorrect naming of the Adivasi tribes who would be affected by the plantations (a scheme from Thuamul Rampur referred to Juang and Bhuiyan Adivasis, who live 500 km away in Keonjhar!) Attempts to bridge the cultural gap with Adivasis and recognize their culture fail miserably, suggesting instead that they need to be more “aware” and “in good humor” to protect the plantation: “[Tribals’] culture and religious sentiments are also to be taken care of and to keep them in good humor, incentives on developmental/cultural activities shall be given which will have a long benefit on the success of plantation programme. All forest conservation events shall be celebrated in their village for creating awareness among them for the protection of the plantation” (p. 146)

3.5.3 Podu futures on plantation landscapes

In reality, the forest department is not wrong flagging concerns about plantation longevity. As I will explore in Chapter 5, many plantations’ lives are cut short. Communities are acutely aware that the spatial and ecological imposition of plantations on podu lands links to a broader political project of asserting state sovereignty.\textsuperscript{27} They reject the familiar set of counterintuitive assumptions: that Adivasi customary rights, livelihoods, and cultures are obsolete; that plantations are equivalent to forests; that plantation protection leads to “benefits.” In return,

\textsuperscript{26} In the case of Melkundel, the total budget is 4.5 crores rupees or about 650,000 USD. At a rate of 125 Rs a day (less than 2 USD), and including 128 person days/ha for years 0-10, fencing work, and soil/moisture work, payments to workers over the course of a decade represents about 20% of the budget. 

\textsuperscript{27} In the 1970s, teak became an important focal point of Adivasi struggles for sovereignty. Teak plantations were burned, saplings destroyed, plantations uprooted, and forest department infrastructure demolished. Sen (2017) writes that as part of the Jungle Katai Andolan, Adivasis “damaged state forest as a symbolic act of contesting state ownership of the woodland and asserting the historical right of the Adivasis over the forests” (p. 195). This stood in contrast to the narratives of eco-friendly Adivasis, literally hugging trees in the Chipko movement. Both Sen (2017) and Gadgil (2007) write about this sagwan vs. sal (teak vs sal) movement, which linked to the political struggles for an independent Adivasi state, Jharkhand and articulated the sagwan/teak as an exotic, ‘statist’ symbol (Sen, 2017).
and out of need, they assert their own agency by reverting land use to podu. If they are not willing to do that, they clear forest land elsewhere to ensure their food security and podu production: “Wherever we are doing shifting cultivation, the forest department intentionally comes there for plantation. So, we keep moving” (Ladies focus group, 2018). The communities I spoke to reported getting about half of their food basket from the forest, including podu. Given this, and the cultural significance of the practice, the forest department’s attempts to motivate communities to protect plantations rather than their territories is literally and figuratively an uphill battle.

This clear-cut conflict raises the question of whether the goal of plantations on podu lands is truly restoration. Even in conversation with FD officers, defining motivator of CA implementation remains processing forest clearances as fast as possible for “ease of business.” It took me a few months to realize that the Forest Department, rather than acting as a regulator to ensure forest protection, actually acts a broker of “forest diversion for non-forestry uses,” or deforestation. Forest clearances largely rely on divisional forest departments to arrange the documents required for proponents who may already have a memorandum of understanding in place with the state government. Land banks are established to reduce bottlenecks in providing proponents clearances. As I will share in Chapter 5, violations are commonplace and perverse incentives rampant. While targeting podu may not be a goal of the national policy as per the letter and spirit of the law, it is an outcome at the local level, where podu lands are seen as “empty” (Forest Officer Interview, 2018). Podu land grab is enabled by poorly implemented tenure reforms, casual treatment of safeguards, and stalled constitutional rights.

At a meeting with Bhuiyan women in Keonjhar, one research team member asked what they would do if their podu lands were taken over for plantation. The answer came: “Well, we will clear more jungle and do podu elsewhere.” We explained that those places were also earmarked for plantation. Another response came: “We will not allow them. If they do plantation everywhere, what land will be left? How will we survive?” These questions do not appear to be keeping anyone else up at night.
3.6 Conclusion

According to Mansourian (2016) in her article “Understanding the Relationship between Governance and Forest Landscape Restoration,” restoration (a) introduces new interests into an uneven power structure, (b) creates competing land-uses, (c) aggravates tenure insecurity, and (d) is planned on an ambitious scale. All four of these factors are present in the case of compensatory afforestation. According to another restoration governance scholar, van Oosten (2013), unless these political factors are taken into consideration, it is likely that programs like CA could lead to increased state control over forests, bureaucratization, corruption, and biodiversity loss. These concerns reflect the critiques of civil society organizations as well as the government reports themselves, which will be explored in Chapter 4. Van Oosten’s emphasis on conflict will be explored in Chapter 5, on community and civil society responses to plantations.

According to a report by IUCN and the Ministry of Environment, Forest and Climate Change, Government of India, 94.4% of the nearly 10 million ha of area brought under restoration in India from 2011 till 2016-17 was state-led (Borah, Bhattacharjee, & Ishwar, 2018, p. viii). NGOs and private companies restored the remaining 5.6%, with NGOs taking up the larger share. This data raises two contradictions. First, despite the broader forest tenure transition, and its potential for supporting community conservation, the state is clearly maintaining a dominant role. Second, given that many communities in India practice vast, organized, and every day environmental care, is there space for their initiative-taking? (Singh, 2013).

At its root, restoration is part of a larger project for climate, environmental, and intergenerational justice. It is a practice of environmental care and commoning. Indigenous scholars such as Zoe Todd, a Metis anthropologist, point out that climate “solutions” miss this. Reminding settlers and non-Indigenous peoples that the climate crisis not the first apocalypse faced by Indigenous peoples in the Americas, she shares that, “In my home territory, the principles of loving accountability and reciprocity are deeply embedded in Indigenous legal orders and relationships... This ability to face the past, present, and future with care—tending to relationships between people, place, and stories—will be crucial as we face the challenges of the Anthropocene, collectively” (2016).
In the forests of Odisha, India, where my research is situated, the several-decades old tradition of community forestry is a living example of Todd’s reminder. Neera Singh describes how, noticing how degraded common forests became, “people began to care for the forest – including the trees, plants, and the wildlife that returned to the forest as it regenerated – in the same way as intimate social relations are developed, by spending time together and paying attention to each other” (2017). Unlike the process of colonialism which “severed relations” (Davis and Todd, 2017) between people, animal, plants, land, and other kin, through community-based restoration, relations and new subjectivities were “grown” alongside forests (Singh, 2013). This created the conditions for commoning practices that enabled forest caretakers “to think, feel and act as a commoner,” drawn “into affective relations with their local forests, its vegetation, and its wildlife and generate a sense of ‘being-in-common’ with the forest and with the other members of human community” (Singh, 2017). Though my thesis does not extensively explore community-based restoration, it is important to highlight that alternatives to state-led restoration persist.

The field of Indigenous planning28 is one potential source of insight for those working towards more democratic forest governance. Hirini Matunga, Maori planner, points out that Indigenous people have been planning all along, even if this was not recognized or honored by settler states (2013). He describes planning as the process through which Indigenous people spatialize their aspirations, identity, and indigeneity (Porter, Matunga, Viswanathan, Patrick, Walker, Sandercock…& Jojoa, 2017, p. 641) based on the critical connections of people, place, and ancestors. Place-based planning is therefore carried out through long and close association between people and place, building knowledge of a specific environment, which is viewed as a communal resource. Most importantly, and connecting to questions of governance, “Indigenous communities must define what a ‘duty of care’ means appropriate to their specific context, rather than risk it being imposed externally by others” (2013, p. 22).

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28 “Indigenous people making decisions about their place (whether in the built or natural environment) using their knowledge (and other knowledges), values and principles to define and progress their present and future social, cultural, environmental and economic aspirations” (Matunga, 2013).
Given that India has the largest populations of Indigenous peoples in the world, though not officially recognized as Indigenous peoples (“India”, International Work Group for Indigenous Affairs, undated), there is huge scope for the kind of community planning described by Matunga. In the Indian context, there are laws in place that predate the FRA (2006) that provide for this level of autonomy for Adivasis in Adivasi-dominant districts, such as PESA. According to Patnaik, the Panchayats Extension to Schedule Areas (PESA) Act (1996), decentralized state-centric forest governance by foregrounding the grama sabha (village assembly) and provided a precedent for future laws related to Adivasi rights to local governance (2007, p. 5). However, this Act’s implementation has been largely derailed, including a failure to draw up guidelines in Odisha. In theory, many compensatory afforestation projects could be stopped through grama sabha resolutions, though due to the lack of guidelines, the law is assumed to be powerless. The FRA, in part responding to the government’s failure to implement PESA, expanded the role of the grama sabha as the competent authority in village-level forest governance beyond just Adivasi-dominated districts to all forest-dweller communities.

Part of the reason why scholars strongly advocate tenure-responsive FLR (McLain et al., 2017; van Oosten, 2013) is that the shift to democratize, decentralize, and decolonize forest governance has been slow (Rights and Resources Initiative, 2018). The FRA has massive potential but single-digit implementation rates (Kumar, Singh, & Rao, 2017), and whatever success exists is due to the hard work of communities and civil society to fight an unresponsive administration. For many who advocate a rights-based agenda, the success of FLR is linked to the success of the forest tenure transition; FLR’s potential to push for more rights recognition is strategic and essential.

According to McLain, et al. (2017) recognition of rights and devolution of rights “is not optional in most situations if FLR initiatives are meant to be successful.” Tenure reforms have helped to put rights on paper, but that is not enough: rights in practice are what count (McLain et al., 2017). Beyond safeguards such as free, prior, and informed consent and voluntary guidelines, communities need “political leverage” in the form of “position and capacity to exercise rights...[which] provide communities and individuals the agency and capacity needed to withhold
agreement when decisions about restoration design do not meet their understandings of what is reasonable”. This echoes the calls of Indigenous scholars that advocate for a “politics of refusal” beyond a “politics of recognition” (Audra Simpson, 2014; Daigle and Ramírez, 2019; Wright, 2018).
4 Impacts of Compensatory Afforestation

In this chapter, I show that compensatory afforestation has consequences for communities even as the policy claims to offset ecological destruction elsewhere. I show that, at the local level, repair economies treat grassroots communities which receive offsets as green collateral damage by failing to consider how policies impacts them. Following researchers (Ghosh, 2017; Kohli, Menon, Samdariya, Guptabhaya, 2011), CSOs (Kukreti, 2017), and the Comptroller and Auditor General of India (2013), my work calls into question the validity of CA as an offset. I do so by focusing on the localized impacts of green grabbing, as Fairhead, et al. (2012) recommend, in two districts of Odisha. Before diving into the consequences, I will discuss the scale and unevenness of state-led restoration impacts on local communities.

The gravity of the climate crisis means that the restoration agenda must be ambitious, but also responsible. India’s restoration goals are second only to China’s, with plans to restore 21 million ha of degraded forest lands by 2030 (IUCN DC, n.d.). This will help India meet its carbon sequestration goals by capturing 1.99 gigatons of carbon (IUCN, n.d.). It is also projected to add 6.5 billion USD to India’s economy (IUCN, n.d.). This effort fits into India’s longstanding national strategy to achieve 33% forest cover (see Davis and Robbins, 2019 for an explanation of the arbitrariness of this figure).

However, as Chhatre and Agrawal (forthcoming) have pointed out, in addition to metrics like hectares restored, carbon captured, and profits projected, the impacts of restoration can also be measured in terms of people affected. This is important to study, as consequences for local communities can impede the success of the restoration agenda, and the climate agenda by extension. In the case of in India, for example, the failure of restoration policy to harmonize with ongoing forest reforms and mainstream democratic, rights-based approaches, suggests that

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29 A CIFOR review of 79 studies on landscape approaches (13 peer-reviewed), indicated that of the studies that discussed reasons for the success of landscape approach projects (about 50%), community management and engagement outranked reasons like money, technology, and leadership/enforcement (Reed, van Vianen, Barlow, & Sunderlin, 2017, p. 487).
restoration could lead to dispossession, livelihood precarity, and criminalization for forest-dwelling Indians.

About 250 million Indians are forest-dwellers, of whom 100 million are Adivasis, or members of Indigenous tribes (Khare, 2015). Arvind Khare notes: “To put these numbers in perspective, if considered a nation by themselves, [Adivasis] would form the 13th largest country in the world, even though they cannot be depicted as representing any singular, monolithic culture” (2015). Between 10 and 40% of forest-dwellers’ livelihoods come from common property resources (Lele & Menon, 2014), which according to the National SSO of India (1999) compose 15% of India’s landmass (Ramdas, 2014). The recognition of rights over these expansive commons is disappointing, with Forest Rights Act implementation in single digits.

While communities as a whole are connected to the land through stewardship of their common property resources, women especially are intergenerational knowledge keepers and therefore central to community-based conservation. According to Sagari Ramdas (2009), the “ancestral plural relationship that women hold with the forestspace,” is animated through “shifting cultivation, grazing, food production, foraging for wild fruits, vegetables, tubers and medicines, saving seeds and breeds, collecting fuel wood, forest produce and materials to build homes, worshipping their ancestors and gods and a space to celebrate and mourn.” This means that women will be particularly impacted by the imposition of plantations on their lands.30 According to Dubey and Chitkara (2018) in their study of gendered impacts of CA across dozens of plantations, women forest-dwellers are disproportionately affected by CA plantations, facing “an environment of fear and harassment” while fulfilling responsibilities such as collecting minor forest produce, medicines, and forest foods. I showcase these impacts by foregrounding women’s insights in this chapter.

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30 While studying this separately is outside of the ambit of this research paper, I attempt to foreground their experiences and knowledge as much as possible.
4.1 Compensatory Afforestation in Keonjhar and Kalahandi

According to the Forest Department (FD) website (2019), from 2008 to 2013 more than 369,288 ha were covered under all kinds of afforestation and silvicultural work across Odisha. Nearly 310 million seedings were planted, and nearly 55 million more were distributed (Odisha Forest Department, 2019). Compensatory afforestation is one of the programs included, and there are different ways to trace the scope of its implementation. Reliable, state-wide data for the period in question is unavailable, and using diverse data sets to piece together a historical picture is a challenge. Below I will therefore summarize Forest Department data from a few different sources, noting their respective limitations.

In the CAG’s 2013 report on compensatory afforestation, which shed light on the variety of gaps in the implementation of compensatory afforestation and management of funds in CAMPA, forest departments’ failure to follow through on obtaining lands for CA and their legal notification was flagged as an issue. The CAG found national performance “dismal,” with full notification of stipulated lands at around 14% nationally (p. x). Odisha was relatively better at 68%, though there were several indicators the CAG noted Odisha had not tracked (p. 227).

After the CAG report, the eGreenWatch public accountability website was launched to monitor the use of CAMPA funds and compensatory afforestation goals. 31 For each FCA-cleared project, forest diversion sites and plantation sites are reported, as well as payments against NPV, CA, etc. Additional works, funded by CAMPA but not specific to projects, also constitute a large part of the database. 32 In Odisha, the website has information on 550 forest diversions, totaling 80,874 ha. 33 Almost a one-fifth of this mining is in Keonjhar district, the study area (14,391 ha have diverted for 51 mining projects).

31 It was first mandated in a 2009 Supreme Court order but wasn’t set up until after the CAG report was released in 2013.
32 Each plantation site has its own entry with details about year-wise expenditure, number of saplings planted and species diversity, and the legal status of the plantation site. Spatial data and sometimes images are uploaded as supporting evidence. My experience on the ground is that for projects after 2009 the database is fairly comprehensive but not complete, at least in the division where I was based. As the data is uploaded at the DFO level, some divisions would be more comprehensive than others.
33 A high-level forest officer told me that this data was incorrect.
The graph below differentiates plantations carried out on degraded forest land (DFL) and non-forest land (NFL). That is, lands belonging to the forest department versus those belonging to the revenue department. It also differentiates between those sites which compensate a particular site of forest diversion (CAP) and those carried out in general (NCAP). The sites studied in this thesis are those in the category of NFL CAP (orange), which have the most data available.

**Graph 3: Plantations reported on eGW from 2007-2016**

Based on this information, the vast majority of CAMPA-funded plantations take place on degraded forest land. Over time, the project-specific plantations are also transferring to degraded forest land rather than non-forest revenue land, perhaps due to saturation or changes in guidelines. Of the sites reported, 376 were project-specific CA plantations, totaling 10 million saplings on 22,474 ha (Non-Forest Land: 3,680 ha; Degraded Forest Land: 18,044 ha). 2,112 plantations were non-CA, totaling 60 million saplings on 91,290 ha (Non-Forest land: 3,441 ha; Degraded Forest land: 87,829 ha). The total expenditure for the 2,490 plantations has been listed as 16,460,27,791 INR (almost 23 million USD), but this number is unreliable as many sites did not report any expenditures.

According to law, non-forest revenue land which has been transferred to the forest department for plantations must be formally notified as a Protected Forest; in the case of Odisha, Section 33 of the Odisha Forest Act applies. A thorough analysis of all of the notifications available on the FD
website and the Odisha Gazette Website shows that since 2005, 7771 ha of land have been notified as Protected Forest.\textsuperscript{34} It is important to note that these data are not complete and can only be used to measure notifications of revenue lands as protected forests, in the name of CA, and not plantations themselves. As seen in Graph 5, the district with the most area notified as forests due to CA plantations is Keonjhar, where more than a quarter of the state’s total CA was located from 2008 to the present. Graph 7, representing proposed plantations, shows the upcoming scale and intensity of plantations in a new target, Kalahandi.

Unlike Keonjhar, where the majority of CA plantations offset nearby mines, the proposed plantations in Kalahandi are telecoupled to deforestation elsewhere (including mines in Keonjhar, 500 km away). Many Kalahandi plantations are more than double the average area, covering the entire village commons in a context of miniscule individual landholdings. They are also concentrated in one block, Thuamul Rampur. Importantly, many of these lands were classed ‘uncultivable wasteland’ through processes of land survey and settlement that revoked rights already held by communities under feudal kingdoms (Kumar, Choudhary, Sarangi, Mishra, & Behera, 2005). This represents an intensification and spread of CA in tenure-insecure areas. The following two sections explore this across the areas studied, Sathkandia Pidha (Keonjhar) and Thuamul Rampur (Kalahandi).

\textsuperscript{34} Database assembled with the help of Megha Madan, December 2018 - February 2019
Graph 4: Timeline of Notifications reported in Odisha Gazette

Graph 5: Notifications of Protected Forests from CA
Graph 6: Proposed CA Sites in Odisha (% of total area)

Total land: 14,000+ CA

Koraput 3.0%
Jharsuguda 1.9%
Dhenkanal 3.5%
Bolangir 2.4%
Sundargarh 4.8%
Rayagada 5.7%
Anugul 7.7%

Kalahandi 50.0%
Keonjhar 18.7%

Graph 7: Past Plantations and Proposed Plantations
4.2 Afforestation in Sathkandia Pidha

Hilly and forested Juangpirh, the homeland of Juang Adivasis in Keonjhar, sits at the origin of one of east India’s main rivers, the Baitarani. Sathkandia Pidha is a unit of about 10 villages in Juangpirh and is one of seven pidhas or units of governance. I selected this area within Keonjhar district based on the high density of CA plantations, and the historical imagery suggesting plantation conflicts on Juang podu lands. Juang Adivasis are known as the oldest of the tribes in the region and supplement their shifting cultivation and rice cultivation with seasonal agricultural work. Ultimately the villages I selected include four Juang villages from Sathkandia Pidha and two villages that border them – one Bhuiyan village and one largely non-Adivasi village. The core case study, featured in the following chapter, is a 250-ha plantation in Tala Raidiha, a Juang village in Sathkandia Pidha/Banspal Block, Keonjhar, Odisha.35

In Sathkandia Pidha, aside from forest products and podu, Juang and Bhuiyan families in Keonjhar grow rice on lowlands. However, many families do not have lowland holdings, as I will explore in the following sections. Precarity, food insecurity, and tenure ambiguity therefore underscores the importance of podu livelihoods and forest access for Adivasi communities in the Sathkandia Pidha region. As far as mainstream development indicators go, such as income, education, and health, Juang Adivasis form a subset of Adivasis, Particularly Vulnerable Tribal Groups, who are among the least secure in India (Census -see Appendix 54: Additional table). Moreover, their lands and the areas surrounding are often mineral-rich as well as forested and have been active sites of commodity extraction for the past century, bringing diverse vested interests into the picture.

35 As seen in Graph 4: Timeline of Notifications reported in Odisha Gazette, this 2010 plantation in Keonjhar represents peak notification of lands CA in the past decade in Odisha.
4.2.1 Forest products and podu in Sathkandia Pidha

Forest products such as fruits, roots, kendu leaves, fuelwood, seeds, and medicines are an important part of forest-based food security and livelihood security in Adivasi areas. Podu cultivation makes up a large part of the Juang and Bhuiyan livelihood landscape in Sathkandia Pidha (see map below) and is a whole-family activity. Before fallows and jungles can be farmed, they are cleared with fire. After three seasons (raasi, or niger seed; local rice and millets; niger seed again), they are left fallow for forest regeneration. This prioritizes the cash crop, niger seed, while also ensuring food security. Vegetables are also intercropped within the plots. Agroecological practices are still the mainstay: seeds are saved, local varieties are planted, and no chemicals are used. Festivals are linked key moments in the cycle, such as before planting the first seed.

Map 1: Composite map of podu across 2008-2018 in four villages of Sathkandia Pidha

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36 In Juangpirh, Keonjhar, community members report 20 kinds of greens and 10 tubers collected from the forest (Sahu, 2007, p. 84). In the same area, non-timber forest products which can be sold such as bark, gum, fruits, lac, roots, sal leaves, and kendu patta (though their availability has lessened) (Rath, 2005, p. 70).
4.2.2 Plantation timeline in Sathkandia Pidha

Since 1992, the study area has been targeted for CA plantations by at least a dozen Keonjhar mines. In collaboration with community members, I prepared a timeline of all of the plantations in a given village, based on the plantation’s location, their labor on these sites and interactions with the FD. After cross-checking this information with land records and the eGreenWatch database, I added proposed plantations.

The resulting timeline includes 26 plantation sites across six villages. (I double-counted those plantations which affected multiple villages, but did not count separately patches of the same plantation within a single village.) In total, Juang and Bhuiyan community members reported twenty plantations, of which twelve are relevant to this study. I found three additional sites in the FAC minutes which were planned but did not materialize (usually because “forests were found well stocked” but in one case “due to strong resistance by the local population”). The forest clearance website revealed three more proposed plantations, in Sikulapada, Raidiha, and Guptaganga. The plantation sites in Sikulapada are podu lands and the plantation sites in Raidiha are on a dense forest, and may not pass FAC inspection. The table below includes selected plantations. Some of these plantations are standing, though in many places, the lands have been reverted to podu.

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38 According to the Odisha Gazette, historical plantations are linked to Dalpahar Mines of Shri RB Das, Uchabahali Mines of Indrani Pattnaik, Roida Iron Ore mines by KN Ram, Adhunic Metalicks, and Tata’s Joda East & Joda West mines. According to Mahakul, a plantation in Kadalibadi was linked to Rungta. Upcoming plantations are linked to OMC Kondhbondh and Malangatoli Iron Ore Mines of OSIL according to forest clearance documents.

39 Four were plantations from social forestry schemes in the 1980s and 1990s. Four plantations were cancelled due to protests or due to the community telling the forest department they did not want a plantation.
Table 2: Selected Past and Proposed Plantations in Sathkandia Pidha

<table>
<thead>
<tr>
<th>Village/Forest name</th>
<th>Year (eGreen-Watch)</th>
<th>HA</th>
<th>Year Notified (Odisha Gazette)</th>
<th>Area notified (Odisha Gazette)</th>
<th>Project name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Golabandh Raidiha (alias Tala Raidiha)</td>
<td>2017-2018</td>
<td>122.16</td>
<td></td>
<td></td>
<td>Joda West Iron &amp; Mn. Mines of M/s TATA Steel Ltd. CA at Golabandha Raidiha of BJP Range</td>
</tr>
<tr>
<td>2 Golabandh-Raidiha (alias Tala Raidiha)</td>
<td>2009-10</td>
<td>127.839</td>
<td></td>
<td></td>
<td>Joda West Iron Ore mines of TISCO-Golabandha-Raidiha</td>
</tr>
<tr>
<td>3 Guptaganga</td>
<td>PROPOSED</td>
<td>270</td>
<td></td>
<td></td>
<td>Malangtoli Iron Ore Mines of Orissa Sponge Iron &amp; Steel Limited (Formerly known as Orissa Sponge Iron Ltd) (OSIL)</td>
</tr>
<tr>
<td>4 Guptaganga Protected Forests</td>
<td>2009</td>
<td></td>
<td>38.905</td>
<td></td>
<td>Dalpahar Mines of Shri RB Das / Uchabahali Mines of Indrani Pattnaik - (did not happen; Plantation #2 happening here)</td>
</tr>
<tr>
<td>5 Raidiha (alias Upa Raidiha)</td>
<td>2011-12</td>
<td>20</td>
<td>2010</td>
<td>36.499</td>
<td>2nd RML of Roida Iron Ore Mines by K.N. Ram &amp; Co. at Raidiha</td>
</tr>
<tr>
<td>7 Raidiha (alias Upa Raidiha)</td>
<td>PROPOSED</td>
<td>51.225</td>
<td></td>
<td></td>
<td>Kandbandh OMC</td>
</tr>
<tr>
<td>8 Sikulapada</td>
<td>PROPOSED</td>
<td>62.058</td>
<td></td>
<td></td>
<td>Kandbandh OMC</td>
</tr>
<tr>
<td>10 Tala Baitarani Protected Forests</td>
<td>2009</td>
<td></td>
<td>13.48</td>
<td></td>
<td>Joda East Iron &amp; Manmore Manganese Mines of Tata- (did not happen; Plantation #2 happening here)</td>
</tr>
</tbody>
</table>

4.2.3 Plantation impacts on tenure-insecure landscapes

In the six villages, tenure security is weak and a small proportion of the village’s land is in the hands of the villagers. According to the 2011 Census, the percentage held by the community is
only 2% to 10%, with the high end representing a non-Adivasi-village outlier. Meanwhile, land that has been transferred to the forest department for CA plantations ranges between 19% and 62% of total village lands. Again, the outlier low-end is a non-Adivasi village, where the burden of the relatively smaller transfer rests fully on the village’s Adivasi households. The podu lands transferred to the forest department are in the category Abad Ajogya Anabadi, “uncultivable wasteland”. The loss of these lands to plantations amounts to dispossession, given that customary rights over the lands were never settled in the first place. ⁴⁰

Occupation of podu lands leads to a land squeeze for podu cultivation, loss of fallows for livestock grazing, and reduced mobility when lands are fenced. Podu lands are usually fallows when they are targeted for plantation, meaning that immediate impacts are often felt more in terms of a squeeze on grazing land than agricultural land. Villagers in one village reported that the forest department responded to complaints about loss of fallows by suggesting that people should only keep as many livestock as they can graze in their immediate landholdings. Imagining a reality without livestock, the informant reflected, “That is when we knew they killed us” (Interview, 2018). In a neighboring village, the concern was echoed: the land squeeze forced them to graze their animals in the sal forest, which hurts both the animals and the jungle.

Forest rights claims have done little to address these concerns. In the four villages where individual FRA claims have been recognized, according to Integrated Tribal Development Agency (ITDA) data, the average IFR area per household ranges between .80 and 2.57 ha. Tala Raidiha, with the highest per-household claim, has not received titles for the correct plots. It is interesting to note that the FRA has been implemented unevenly: in these four villages, the Juang Development Agency supported the Juang community members to claim forest rights. In the Bhuiyan villages, claims have not moved forward and in one village, allegedly government workers requested bribes. None of the village has claimed community forest rights which would allow them to protect their forests unimpeded (though under CFRs they would also have to abandon their podu practices.).

⁴⁰ As mentioned earlier, all lands over a 10-degree gradient were unilaterally declared “uncultivable wasteland” without recognizing any rights, despite de facto land use for podu cultivation. This renders Juang and Bhuiyan podu cultivators tenure-insecure and criminalizes their cultivation practices.
### Table 3: Village Demographic Summary (Census, 2011)

<table>
<thead>
<tr>
<th>Village</th>
<th>Total households (hh)</th>
<th>Total Population of Village</th>
<th>% SC (Dalits)</th>
<th>% ST (Adivasis)</th>
<th>% General</th>
<th>ST Community</th>
<th>Plantation sites reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tala Raidiha</td>
<td>65</td>
<td>267</td>
<td>1%</td>
<td>96%</td>
<td>3%</td>
<td>Juang</td>
<td>2</td>
</tr>
<tr>
<td>Kadalibadi</td>
<td>53</td>
<td>262</td>
<td>0%</td>
<td>85%</td>
<td>15%</td>
<td>Juang</td>
<td>3</td>
</tr>
<tr>
<td>Upa Raidiha</td>
<td>66</td>
<td>298</td>
<td>0%</td>
<td>73%</td>
<td>27%</td>
<td>Juang</td>
<td>5</td>
</tr>
<tr>
<td>Guptaganga</td>
<td>153</td>
<td>610</td>
<td>16%</td>
<td>70%</td>
<td>15%</td>
<td>Juang</td>
<td>5</td>
</tr>
<tr>
<td>Tala Baitarani</td>
<td>49</td>
<td>206</td>
<td>49%</td>
<td>25%</td>
<td>26%</td>
<td>Bhuiyan</td>
<td>2</td>
</tr>
<tr>
<td>Sikulapada</td>
<td>93</td>
<td>464</td>
<td>0%</td>
<td>98%</td>
<td>2%</td>
<td>Bhuiyan</td>
<td>3</td>
</tr>
</tbody>
</table>

### Table 4: Land Record Summary (Census, 2011; Bhulekh, 2019; Vasundhara, 2009)

<table>
<thead>
<tr>
<th>Village</th>
<th>Total village (ha)</th>
<th>FD Transferred (ha)</th>
<th>FD Proposed (ha)</th>
<th>Titled agriculture lands (ha)</th>
<th>% FD total</th>
<th>% Ag titles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tala Raidiha</td>
<td>401</td>
<td>250</td>
<td></td>
<td>16.53</td>
<td>62%</td>
<td>4.12%</td>
</tr>
<tr>
<td>Kadalibadi</td>
<td>283</td>
<td>91.1578</td>
<td></td>
<td>4.71</td>
<td>32%</td>
<td>1.66%</td>
</tr>
<tr>
<td>Upa Raidiha</td>
<td>351</td>
<td>73.94</td>
<td>50</td>
<td>20.81</td>
<td>35%</td>
<td>5.93%</td>
</tr>
<tr>
<td>Guptaganga</td>
<td>1167</td>
<td>70.611</td>
<td>270</td>
<td>19.14</td>
<td>29%</td>
<td>1.64%</td>
</tr>
<tr>
<td>Tala Baitarani</td>
<td>72</td>
<td>13.48</td>
<td></td>
<td>7.14</td>
<td>19%</td>
<td>9.92%</td>
</tr>
<tr>
<td>Sikulapada</td>
<td>496</td>
<td>9.69</td>
<td>61</td>
<td></td>
<td>14%</td>
<td></td>
</tr>
</tbody>
</table>

### Table 5: FRA Summary (Focus Groups, 2019; ITDA Keonjhar, undated)

<table>
<thead>
<tr>
<th>Village</th>
<th>FRA status</th>
<th>Households titled</th>
<th>FRA total land</th>
<th>Average claim size</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tala Raidiha</td>
<td>Titled</td>
<td>52</td>
<td>133.66 acres</td>
<td>2.57 acres</td>
<td>Different place</td>
</tr>
<tr>
<td>Kadalibadi</td>
<td>Titled</td>
<td>37</td>
<td>29.89 acres</td>
<td>.80 acres</td>
<td></td>
</tr>
<tr>
<td>Upa Raidiha</td>
<td>Titled</td>
<td>17</td>
<td>19.6 acres</td>
<td>1.16 acres</td>
<td></td>
</tr>
<tr>
<td>Guptaganga</td>
<td>Titled</td>
<td>73</td>
<td>88.08 acres</td>
<td>1.21 acres</td>
<td></td>
</tr>
<tr>
<td>Tala Baitarani</td>
<td>Claimed</td>
<td></td>
<td></td>
<td></td>
<td>No response</td>
</tr>
<tr>
<td>Sikulapada</td>
<td>Claimed</td>
<td></td>
<td></td>
<td></td>
<td>No response</td>
</tr>
</tbody>
</table>
Table 6: Land transferred to Forest Department khata (Bhulekh, 2019)

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<td>29.80</td>
</tr>
<tr>
<td>'09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>'10</td>
<td></td>
<td>29.57</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>29.57</td>
</tr>
<tr>
<td>'11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>'12</td>
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<tr>
<td>'13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>'14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>'15</td>
<td></td>
<td></td>
<td></td>
<td>3.02</td>
<td></td>
<td></td>
<td>3.02</td>
</tr>
<tr>
<td>Total</td>
<td>250.00</td>
<td>55.91</td>
<td>66.97</td>
<td>70.80</td>
<td>13.48</td>
<td>9.89</td>
<td>457.16</td>
</tr>
</tbody>
</table>
4.2.4 Species selection in Keonjhar

The forest department selects non-browsable species such as teak which cannot be consumed by livestock or wild animals. Local people complained that this brings wild animals into their agriculture fields and villages, unable to feed themselves from the “non-browsable” species selected. Beyond species selection, another means of keeping “biotic interferences” such as livestock out of the plantation is barbed wire fencing. As less dense plantations become popular, in an attempt to move away from the block plantation model, larger areas are enclosed.\(^{41}\) The forest department prefers commercial species to increase plants’ survival rates and lower the amount of guards and watchers required.

However, the forest department asserts that species diversification is part of their plantation approach. When our team visited a government nursery, we were informed that only 10% of the saplings raised are teak. However, teak saplings formed the vast majority of plantations we saw on the ground. eGreenWatch data includes only the number of species selected rather than the ratio of commercial species to locally-useful species and does not provide useful information about distribution of species.

In a village neighboring on Sathkandia Pidha, villagers assert that had they known that the plantation would be only teak, they would never have allowed it: “We thought they would plant a variety of trees. But then they planted only chakunda and teak.” One Bhuiyan woman explained, “From a sal forest we can get wood. We cut the sal to make our houses (though now they are restricting us). In sal forests you can also get sal seed, which we can sell. There are mushrooms. In a teak plantation, you don’t get anything. We get no benefit.” Villagers’ rejection of commercial species contradicts the FD position, expressed in the CA scheme, that villagers can be “inspired” to see the benefits of the teak plantation for their economic development.

A Right to Information application (RTI) filed by community members with the support of civil society organizations in 2010 provides detailed data about all plantation activities planned in that

\(^{41}\) Moreover, as shown in the previous section, fencing composes about half of the budget. When this was raised with high-level officials in the state forest department, they agreed that fencing around low density plantations is excessive.
year by the forest department. Because the campaign at that time was focused on species selection, with a strong rejection of teak, acacia, eucalyptus, and other commercial species, those filing the RTI requested details about the plantation species for a variety of different plantation programs, including CA. The data provided by the forest department is presented in the following tables.

**Table 7: Species selection in Keonjhar in 2010 (RTI, 2010)**

<table>
<thead>
<tr>
<th>Species</th>
<th>BJP Range</th>
<th>Telkoi Range</th>
<th>Total CA Keonjhar Division</th>
<th>Total OFSDP Keonjhar</th>
<th>Grand Total Keonjhar</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of projects</strong></td>
<td>3</td>
<td>2</td>
<td>15</td>
<td>73</td>
<td>103</td>
</tr>
<tr>
<td><strong>Number of ha</strong></td>
<td>110</td>
<td>45.72</td>
<td>582.9</td>
<td>3314</td>
<td>4479.61</td>
</tr>
<tr>
<td>Teak (Tectona grandis)</td>
<td>49258</td>
<td>2200</td>
<td>89970</td>
<td>1408228</td>
<td>1549656</td>
</tr>
<tr>
<td>Acacia</td>
<td>8870</td>
<td>4400</td>
<td>44030</td>
<td>1088298</td>
<td>1145598</td>
</tr>
<tr>
<td>Others</td>
<td>33440</td>
<td></td>
<td>72480</td>
<td>1014864</td>
<td>1120784</td>
</tr>
<tr>
<td>Acacia Menzium</td>
<td>5780</td>
<td>2200</td>
<td>8480</td>
<td>512360</td>
<td>528820</td>
</tr>
<tr>
<td>Sissoo (Dalbergia sissoo)</td>
<td>5820</td>
<td></td>
<td>20445</td>
<td>233300</td>
<td>259565</td>
</tr>
<tr>
<td>Kala Sirsa (Albizia lebbeck)</td>
<td>2475</td>
<td>0</td>
<td>2475</td>
<td>211890</td>
<td>216840</td>
</tr>
<tr>
<td>Cashew</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>184870</td>
<td>184870</td>
</tr>
<tr>
<td>Gambhar (Gmelina arborea)</td>
<td>13796</td>
<td></td>
<td>18323</td>
<td>127660</td>
<td>159779</td>
</tr>
<tr>
<td>Anla (Phyllanthus emblica)</td>
<td>5530</td>
<td>2089</td>
<td>8744</td>
<td>113563</td>
<td>129926</td>
</tr>
<tr>
<td>Karanja (Millettia pinnata)</td>
<td>19950</td>
<td>3099</td>
<td>26588</td>
<td>79465</td>
<td>129102</td>
</tr>
<tr>
<td>Arjun (Terminalia arjuna)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>37300</td>
<td>37300</td>
</tr>
<tr>
<td>Dhala Sirsia</td>
<td>2475</td>
<td>0</td>
<td>6975</td>
<td>11750</td>
<td>21200</td>
</tr>
<tr>
<td>Piasal (Petrococcus Marsupiam)</td>
<td>2475</td>
<td>0</td>
<td>2875</td>
<td>11800</td>
<td>17150</td>
</tr>
<tr>
<td>Mohagani (Swietenia mahagoni)</td>
<td>4950</td>
<td>0</td>
<td>4950</td>
<td>0</td>
<td>9900</td>
</tr>
<tr>
<td>Bahada (Terminalia bellirica)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6150</td>
<td>6150</td>
</tr>
<tr>
<td>Bamboo</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6000</td>
<td>6000</td>
</tr>
<tr>
<td>Khaira (Alcea rosea)</td>
<td>0</td>
<td>0</td>
<td>3375</td>
<td>0</td>
<td>3375</td>
</tr>
<tr>
<td>Asan (Terminalia elliptica)</td>
<td>0</td>
<td>1100</td>
<td>1100</td>
<td>0</td>
<td>2200</td>
</tr>
<tr>
<td>Eucalyptus</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Panasa (Artocarpus heterophyllus)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Kasi (Drymoglossum piloselloides)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ashok (Saraca asoca)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>154819</td>
<td>15088</td>
<td>310811</td>
<td>5047498</td>
<td>5528216</td>
</tr>
</tbody>
</table>
4.2.5 Plantations and local institutions

According to the FRA, the grama sabha (village assembly) is key governance unit for forests within village boundaries, and the forest-department controlled VSS has no standing. However, with budgets for restoration, and a “participatory” institutional infrastructure from ongoing JFM activities, the forest department is well positioned to further institutionalize the parallel VSS apparatus. In doing so, they reanimate institutions like the VSS rather than recognizing broader trends of decentralization and democratization of governance. In one of the studied villages, Kadalibadi, a PhD student performed dissertation fieldwork just after one of the plantation conflicts in the mid-2000s. His account helps explain the dynamics between the FD-sponsored VSS and the traditional jungle protection system. Mahakul (2013) writes:

The traditional process of forest protection adopted by community is *thengapali* system, where two members from two families watch the community forest at night with the *thenga* (the thick and long bamboo). As a rotation system every member carries this *thenga* when their turn of duty comes. Anyone who neglects this process pays a fine of Rs, 20 to the protection committee fund. It is the collective responsibility of the community to protect the forest in their day to day life. Rather it is a part of their life as forest is regarded as their mother. In the case of VSS, the system of forest protection is watch and ward. This is a voluntary process where FD pays anyone who attains the duty of watching the forest at night. (Full excerpt in annex)

In Kadalibadi, as mentioned previously, a series of plantations started in 1992. In retrospect, Kadalibadi was the first main target of plantations, a village with minimal landholdings is held by families. Mahakul documents the interactions between the forest department, barabhaika or village leadership, and the reactions of community members that occurred in 2005 in relation to a Rungta CA plantation. The postponement of the village’s ambanua festival due to conflict of plantations shows how cultural and micropolitical elements of collective life are impacted by the podu-plantation tension. It is worth including Mahakul’s detailed description, edited for length:

In the *ambanua* (new mango eating) festival they offer green mangoes to the deities and ancestral spirits and thereafter they eat the new fruit. During the initial period of fieldwork, it was noticed that the *ambanua* festival was delayed by one month... Through discussion it was revealed that the Forest Department took over all the hatikana podu land (20.56 hectare) for plantation in 2005. The Forest Department did not seek the

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42 Rath (2005) also includes details of this conflict in his report.
permission of barabhaika. Rather they started putting pressure on the people to vacate the land for commercial plantation. As the podu land is community property of the Juang, they did not want to give it to the Forest Department.

As a strategy, the Forest Department bribed Narahari Juang and Raghu Juang (leading members of the village forest committee (VSS) created by Forest Department) to give their two-hectare podu land for commercial forestry. They were given Rs.1,500 each to motivate the community to accept the Forest Department’s proposal. The Forest Department began commercial forestry on Narahari and Raghu Juang’s land. The barabhaika and community members learnt about Narahari and Raghu’s deeds and were disappointed.

After many rounds of discussions and warning, the barabhaika and the other community members decided not to celebrate the ambanua festival in the podu patch and within the territory, as a sign of protest against Narahari and Raghu and the Forest Department. On this matter Raghu’s mother (Raisu Juang) expressed that “he has sold his mother to the Forest Department for some money.”

In the council meeting it was decided that Raghu and Narahari should return that amount and demand that the Forest Department should return their podu land. The decision of the council was not followed and the issue remained unsolved.

Later the village council decided that the whole community should not suffer because of the betrayal of two Juang. The members felt that the mangoes for the season would remain untapped. The council decided to celebrate the ambanua festival in April. So that the mangoes may be consumed, otherwise the Gauda are always ready to tap the fruits.

This experience in Kadalibadi demonstrates the questionable working practices of the forest department in seeking buy-in from communities. It also demonstrates the division among community members when individualistic desires emerge, and the use of a cultural boycott in this case to attempt to influence them. According to the list of office bearers of the VSS and the KJSS, Raghu Juang was secretary of both, and Narahari Juang was the Vice President of the KJSS and the Joint Secretary of the VSS. Mahakul notes this, mentioning that “From villagers it was learnt that appointment of the two common members from the traditional body in both the committee is a strategy of the Forest Department to manage the finances smoothly” (p. 169). When we visited Kadalibadi, we learned that the forest department returned last year to solicit interest in a plantation project. The villagers reported to us that they rejected the idea, and the plantation did not occur.
4.3 Thuamul Rampur, Kalahandi district

Thuamul Rampur is a new frontier of afforestation. Its survey and settlement history is similar to the history of Keonjhar and is also a district where PESA is applicable. In both, podu was permitted by feudal kings and Adivasis held titles to customary lands, paying hoe tax or horse tax (Ramdhyan 1949 cited in Kumar, 2014).43 Thus in terms of social relations of production and livelihood patterns, Thuamul Rampur block and Juangpirh are comparable. One factor that differentiates them is the presence of left-wing extremism in Thuamul Rampur, which generates tension in administration-community relations. Another is the presence of mining in Keonjhar, which has led to its long history of compensatory afforestation.

Through analysis of publicly available forest clearance documents, I found evidence that more than 7,000 ha of anabadi lands in Thuamul Rampur have been earmarked for plantations. This covers 56 plantations across almost as many villages (some villages have multiple plantations). Additionally, while the average plantation size for proposed plantations across Odisha is 72 ha, in Thuamul Rampur it is double at 128 ha. This marks an increase in scale and intensity of compensatory afforestation, concentrated in one “receiving” district. Several of the villages stand to lose almost the entirety of their common lands. These include Jhabiguda, Uparjhabi, Balangi, Badachhatranga, Tebhakalam, and Pokhra (see table below).

This is highly concerning as like Bhuiyanpirh and Juangpirh, the communities living in Thuamul Rampur are some of the most marginalized Adivasis nationally, and report high rates of landlessness. They also report that the commons, which make up the majority of the lands to be alienated, are vital to their livelihoods (Focus group, 2018). An increase in the scale and intensity of plantations, combined with higher precarity of local communities, is very concerning. The prospect of enclosure and plantation of the commons dismayed the community members with whom our team exchanged information. In one village, where the proposed plantation area was several hundred hectares, one villager’s reaction was very telling. “Wait-- we have that much

43 The total area in Thuamul Rampur block estimated to be under shifting cultivation was 88,770 acres (Sundarajam 1963 in Kumar, 2014).
land?” he questioned, indicating the proposed plantation size was so large he could not believe it would fit in his village’s boundaries.

**Table 8: Summary of upcoming plantations in Thuamul Rampur**

<table>
<thead>
<tr>
<th>Villages (n)</th>
<th>Projects requiring offsets</th>
<th>Plantations (n)</th>
<th>Total Ha</th>
<th>Total Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>26</td>
<td>54 plantations</td>
<td>6,714</td>
<td>16,590</td>
</tr>
</tbody>
</table>

**Table 9: Details of upcoming plantations in Thuamul Rampur (more than 100 ha)**

<table>
<thead>
<tr>
<th>Village Name</th>
<th>Proposed plantation Area (Ac)</th>
<th>Projects (if more than 1)</th>
<th>Total AAA (&quot;uncultivable wasteland&quot; (ac))</th>
<th>Total AJA (&quot;cultivable wasteland&quot;)</th>
<th>% of Wasteland Commons proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Jhabiguda</td>
<td>326.10</td>
<td></td>
<td>332.8</td>
<td>0.52</td>
<td>97.83%</td>
</tr>
<tr>
<td>2 Uparjhabi**</td>
<td>889.71</td>
<td></td>
<td>866.13</td>
<td>71.03</td>
<td>94.94%</td>
</tr>
<tr>
<td>3 Balangi</td>
<td>1325.74</td>
<td>5</td>
<td>1325.11</td>
<td>74.19</td>
<td>94.74%</td>
</tr>
<tr>
<td>4 Badachhatranga</td>
<td>826.43</td>
<td></td>
<td>881.4</td>
<td>39.08</td>
<td>89.78%</td>
</tr>
<tr>
<td>5 Tebhakalam</td>
<td>1771.71</td>
<td></td>
<td>1952.12</td>
<td>25.09</td>
<td>89.61%</td>
</tr>
<tr>
<td>6 Pokhra</td>
<td>437.56</td>
<td></td>
<td>487.34</td>
<td>4.85</td>
<td>88.90%</td>
</tr>
<tr>
<td>7 Bhitraguma</td>
<td>422.84</td>
<td></td>
<td>524.56</td>
<td>0.39</td>
<td>80.55%</td>
</tr>
<tr>
<td>8 Pastiguda</td>
<td>539.05</td>
<td></td>
<td>627.6</td>
<td>42.67</td>
<td>80.42%</td>
</tr>
<tr>
<td>9 Kumjore</td>
<td>772.63</td>
<td></td>
<td>1007.71</td>
<td>8.72</td>
<td>76.01%</td>
</tr>
<tr>
<td>10 Melakundel</td>
<td>1273.28</td>
<td></td>
<td>1593.74</td>
<td>112.24</td>
<td>74.64%</td>
</tr>
<tr>
<td>11 Pokhariguda</td>
<td>754.05</td>
<td></td>
<td>796.01</td>
<td>270.59</td>
<td>70.70%</td>
</tr>
<tr>
<td>12 Duliaguda</td>
<td>703.02</td>
<td></td>
<td>861.46</td>
<td>156.17</td>
<td>69.08%</td>
</tr>
<tr>
<td>13 Talajhabi**</td>
<td>275.07</td>
<td></td>
<td>318.06</td>
<td>87.79</td>
<td>67.78%</td>
</tr>
<tr>
<td>14 Jubang</td>
<td>631.02</td>
<td>2</td>
<td>937.7</td>
<td>26.52</td>
<td>65.44%</td>
</tr>
<tr>
<td>15 Tarpadar</td>
<td>447.42</td>
<td>2</td>
<td>720.83</td>
<td>9.8</td>
<td>61.24%</td>
</tr>
<tr>
<td>16 Hadkarsi**</td>
<td>562.03</td>
<td></td>
<td>986.4</td>
<td>47.04</td>
<td>54.38%</td>
</tr>
<tr>
<td>17 Kerpai</td>
<td>276.73</td>
<td></td>
<td>521.9</td>
<td>16.89</td>
<td>51.36%</td>
</tr>
<tr>
<td>18 Merkatara</td>
<td>326.12</td>
<td></td>
<td>618.04</td>
<td>33.51</td>
<td>50.05%</td>
</tr>
<tr>
<td>19 Kathakura</td>
<td>333.59</td>
<td>135</td>
<td>624.6</td>
<td>136.98</td>
<td>43.80%</td>
</tr>
<tr>
<td>20 Birmaliguda</td>
<td>269.93</td>
<td>109.24</td>
<td>625.65</td>
<td>20.71</td>
<td>41.76%</td>
</tr>
<tr>
<td>21 Taragaon</td>
<td>423.85</td>
<td></td>
<td>1301.34</td>
<td>48.64</td>
<td>31.40%</td>
</tr>
<tr>
<td>22 Talaambapadar</td>
<td>352.09</td>
<td>142.49</td>
<td>1139.56</td>
<td>84.74</td>
<td>28.76%</td>
</tr>
</tbody>
</table>

**Land already alienated to Forest Department:** Uparjhabi: 338.16 acres; Talajhabi: 651.25 acres; Hadkarsi: 112.8 acres
Among the villages we visited, most have no physical indicators of the land banking process such as signs or pillars, since the projects are still in early stages and the lands have yet to be approved. In some case, the projects are in such early stages that their proposals are not even on the forest clearance website. In villages where the source project has reached Stage-I clearance, pillars have been installed. In one village, villagers were aware that pillars represented an upcoming plantation. They said that a Hindi-speaking outsider came to their village and did a puja in their temple as a way of building rapport with their community. In another, since the pillars were labelled OMC, Odisha Mining Company, the community assumed that their lands were going to be taken for mining, not for plantations.

As discussed in the previous chapter, the process of land banking is rarely sound. Podu land-use on the proposed plantation sites is known to the revenue department. Regardless, upon careful revision of all documents uploaded to the forest clearance website, the lands receive certificates from the revenue department that they are “free of encroachment and encumbrance.” In the field, I saw pillars directly in the middle of unambiguously agricultural lands. This demonstrates that land banking is taking place without care for safeguards, further confirmed by overlaps between proposed plantations and FRA titles held by community members in Tebhakalam, Melkundel, and Kumjore.

The forest rights situation in Thuamul Rampur is problematic, beyond the pressure on land for compensatory afforestation. Communities reported that in many circumstances, forest rights claims which were filed after 2011 have been stalled. Some villagers linked this delay to the government’s interest in their anabadi lands for plantations. While this may be partially true, there may be another explanation. In 2012, the ST & SC Development Department clarified that regardless of tree-cover, anabadi lands are not forest lands and are therefore not eligible for forest right recognition (see Government of Odisha, ST&SC Development Department, Letter No. 10070/550). This represents a nail in the coffin for forest rights in Adivasi Odisha, given that

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44 This bureaucratic classification of podu lands as ‘non-forest’ is just one more obstruction in the ability of shifting cultivators to have their rights recognized through the Forest Rights Act. In reality, the Forest Rights Act is an imperfect way of protecting podu cultivators. Neither the mobile nature of the practice, nor the necessity to cut trees are allowed in individual or community rights.
most community lands are in the anabadi category, and constitutional provisions through PESA are ignored completely. FRA also has limited capacity to protect podu livelihoods.

4.4 Restoring socionatural relationships

According to environmental historian Ramachandra Guha, “Alternative conceptions about property and ownership lay at the root of the conflict between the state and hill villagers over forest rights” (2008, p. 291 in Sen, p. 180). For many land-based peoples, their relationship to the land is developed through everyday, intimate forest-community relationships (Palit, 2009). In the Juang cosmology, Basuki Mata or the earth goddess is believed to own all the Earth’s land (Mahakul, 2013). When the village selects a new site for homesteads or cultivation, Basuki Mata’s permission is requested: “Land for all the Juang is sacred and is under control of the Goddess Basuki. Land is also considered the mother Goddess herself who nurtures all living beings on the earth…plants, and foods” (p. 159, emphasis added). Regardless of the ritual, community members invoke Basuki Mata’s name and presence in respect of her/the land (p. 159).

Like their Indigenous siblings, many land-based communities who identify as peasants, Afro-descendant, Dalit, pastoralist, as well as sea-based communities such as fisherfolks, have ethical practices of resource management based in relationality to beyond-human others. Tuck, Guess, and Sultan (2014) describe this relationship between people and land as “selfsame.” Caring and restoring the land is therefore caring for oneself and one’s community; restoring the land is also restoring socionatural relationships (for more on relationality see Singh, 2018; Bawaka Country, et al., 2015; Todd, 2015). While scholars such as Coombes, Johnson, and Howitt (2012) and Shah (2007) argue that linking Indigenous peoples to particular ecologies becomes a form of fixing them in place (“eco-incarceration”, Shah 2010), it is important to remember that territory and place is not only about rootedness but about ways of being and placemaking.

There is a link between restoration, dispossession, and livelihood precarity which is playing out spatially on Adivasi podu lands in my field sides. Based on a Juang understanding of land/Basuki Mata, dispossession is not just a loss of access to or management of land, it is about the
“severing of relations” that occurs when land-body-community relationship are transformed. Nirmal (2017) refers to this, in the context of Adivasi communities in Kerala, south India, as processes of disembodiment and deworlding. Escobar has referred to this as an “ontological occupation” whereby “the people are taken out of the territory and the territory is taken out of the people” (Escobar, 2015). It is ironic that the severing of obligations between humans and nature that produced the climate crisis is being reproduced in communities disproportionately vulnerable to its effects.

In this section on impacts, I have attempted to share some of the outcomes of this deworlding, while raising it as a theme for future, community-led inquiry. This is a line of exploration which not only transcends hectares and titles, but parses out the “liveliness” in “livelihoods.” McKittrick frames an incisive question in the context of plantation logics in the Americas which speaks to the assumptions that undergird this inquiry. She asks: “If some places are rendered lifeless in the broader geographic imagination, what of those inhabiting the lifeless? Also, what of the worldview of those who occupy the wretched category—is this worldview also lifeless because the geographies surrounding the marginalized are rendered dead? (2013). A tentative answer, as we will see in the next chapter on community responses and resistance in Sathkandia Pidha, is that Adivasi communities in find patches of livability amongst the teak saplings, as communities across the world, over the centuries, have done at the “unruly” plantation edges (Tsing, 2016).

4.5 Conclusion

“If [shifting cultivation] was ever stopped in the forest, there would be no population, for the people could not live, and therefore Deputy Commissioner!” (Govt of India, Report on the Proceedings of the Forest Conference, 1973-94, 1974, p. 27 in Rath, 2005, p. 7).

Plantations have both ecological and socioeconomic implications. Local communities’ podu ecologies are affected by plantation practices: the plantation models, species selection and use of agrochemicals are denounced by communities, pointing to the broader ecological impacts of monoculture on forests. Adivasis’ agroforestry livelihoods are complex, multispecies, and seasonal, and plantations affect their podu, grazing, and access to forest products. This has impacts in terms of food security, and ultimately, food sovereignty, as the agricultural practices
on the hills are based on local varieties of seeds, shared and saved by the community. The criminalization of food production, as Sagari Ramdas (2009) points out, particularly targets Adivasi women, and “displaces them from their central and autonomous role of growing food on this land.” The expropriation of lands for these activities requires a shift of ownership to the forest department, though it cannot be said the revenue department was a far better landlord. Plantation expansion leave villages with a growing number of households facing a “land squeeze,” incompatible with their experience of an expansive and generous Basuki Mata.
5 Defending livelihoods and territory

5.1 Plantation response strategies

My favorite plantation story is from the village of Guptaganga. According to the leaders, a few villagers discovered a plantation site in a far corner of their village forest while grazing cattle. The forest department had employed villagers from a neighboring village, Tangerpada, to dig pits. When Guptaganga villagers found out, they immediately decided to take action: they planted a flag on the plantation site, a clear signal to Tangerpada to cease working there. Tangerpada villagers got the message and refused to work. The forest department came to negotiate with Guptaganga’s leaders to no avail. The villagers recalled blocking trucks with saplings from entering, and sending them back to the nursery. The greatest offense, to the villagers, was not the plantation itself, but that the Forest Department had the audacity to employ workers from another village on Guptaganga’s land.

As this story illustrates and the case study in this chapter will show, communities use a variety of strategies to respond to the state’s attempts to push for plantations on tenure-insecure village commons. These strategies are influenced by circumstantial factors, including the level of dialogue between the forest department and local communities, the stage of the process,\(^5\) and public opinion about the plantation. Responses also reflect the presence of civil society organizations and the possibilities for collectively organizing across communities. In this introduction, I will summarize these factors briefly, before presenting the case study of Tata Steel’s Joda West mine and its associated compensatory afforestation plantations.

5.1.1 Dialogue with decision-makers

In general, the villagers in my study sites took issue with the lack of transparency about forest department plantations. Often villagers came to know about the proposed plantations after the

\(^{5}\) (1) land banking; (2) site identification and forest clearance proposal; (3) Stage-I clearance and demarcation of the site using pillars and signs; (4) Stage-II clearance and notification as a protected forest; (5) Funds disbursed and nursery established; (6) Pits dug and initiation of planting saplings around monsoon season; (7) Project re-initiation after being shut down.
land was already transferred and notified as a Protected Forest. One Bhuiyan woman in a village near Sathkandia Pidha explained to me that generally the “survey” (a team of forest and revenue department workers come for a physical verification) takes place when villagers are away working on the hills, and they hear about it after the fact. The forest department generally pays above-market wages for initial work such as installing pillars, creating the expectation that the upcoming project will pay well.

Among the twenty villages I visited, only one supported the forest department’s plantation efforts. “Twenty years ago, they planted that acacia plantation,” a Juang woman explained during our visit, pointing to the other side of the village. “Now we are using it [for fuelwood]. This teak plantation is like that. We will use it later.” She seemed to be indifferent to news of proposed plantations in her village. However, one member of our team asked, “What about the lands on the hilltop, where you are doing podu? Would it be okay to do plantation there?” “Oh!” she responded. “We will never allow them [FD] to do plantation there.”

5.1.2 Gathering information in different phases

Ideally, villagers would respond to the plantation as early as possible in the process. Until the nursery is built or pits are dug, the implication of the pillars and English signboards that may have been standing for years is rarely clear. However, as we will see in the following case study, civil society organizations may start to connect the dots across villages, and file a Right to Information Act (2005) application to collect information. One of the grassroots workers involved in the struggle at that time proudly told me, “I am an expert in RTI. If anyone has questions about it, even senior people, they come to me” (Interview, 2018).

While village-level experiences help people understand the importance and relevance of the issue, pidha-wide mobilization is enabled by district-level RTI data that helps build solidarity and conveys the scale of the threat. The collective institutions in the communities, such as the pidha-level administration managed by the Juangs, also enable collective mobilization. Civil society organizations who understand the power of traditional Adivasi governance structures work within these systems to push for collective responses. NGOs can also contribute by demystifying
“the system” (communities were not aware of the compensatory afforestation policy, for example) and suggesting advocacy strategies. However, civil society presence is often publicly minimized, as it is often used by those pushing a plantation agenda to delegitimize grassroots struggle or to criminalize civil society workers.

5.1.3 Strategic agreement

If the scale of plantations is small, communities adapt by clearing other available land for podu. However, intensification of scale and size of plantations reduces communities’ abilities to adapt in these ways. Overall, and as seen in the poor longevity of the plantations in Sathkandia Pidha (Chapter 4), I developed an impression that communities see plantations as a temporary imposition on their lands which they can remove at their discretion. This is not to understate their fear of the risks of cutting down a plantation, or impose a false confidence on communities whose interactions with the state are characterized by structural and direct violence. In some villages, reclaiming the land happened “naturally”, for example through a forest fire. When one Bhuiyan woman told me that a plantation in her village burned down due to a stray cigarette butt, she easily identified it as “a good thing.” More often, however, communities themselves clear the plantations. When I suggested that clearing plantations must be a lot of work, one Juang man laughed, saying good-naturedly, “You think it is difficult to clear those scrawny teak trees? We clear the jungle!” Nevertheless, removing root stock is a lot of work, so oftentimes only the teak trees’ trunk and branches are cut, and shoots continue to sprout up amongst agricultural fields. Perhaps this legacy presence of teak satisfies the forest department’s needs to show that they planted the area; regardless, the land remains in the forest department’s records as Protected Forest, while villagers resume podu.

5.2 Joda West Mine

I will now shift frames to the other end of the causal chain: the industry and development projects that require offsets for proposed deforestation. I focus in particular on one mine, Joda West, which is owned by Tata Steel, one of the oldest mining companies in India. Joda West is located in Keonjhar district, about 80 km north of Sathkandia Pidha. In total, up to 80% of Tata
Steel’s iron ore requirement comes from Odisha, of which Joda West is one of the company’s captive mines (the raw materials go directly to Tata factories for processing pellets, rather than being sold on the market). This open cast iron and manganese mine was established in 1933 and is located in the Baitarani and Sidhamatha Reserve Forests, where several mines are clumped within a few kilometers’ radius.46 Joda West currently produces 45,000 tons of iron ore and manganese per year, with a proposal in the clearance process to quadruple production. 47

The Joda West forest clearance history exemplifies the business practices the Forest Conservation Act (1980) is trying to regulate. In 1982, Tata Steel applied for forest clearance for Joda West. For unclear reasons, for two decades no forest clearance was obtained and after that only temporary working permits were obtained. According to the MB Shah Commission on Illegal Mining (2013), between 1993 and 2003 more than 200,000 tons of manganese and nearly 30,000 tons of iron ore were extracted from the mine without authorization.

Following the Shah Commission report, the Supreme Court issued a closure notice to Joda West in May 2014 and provided a six-month window to obtain forest clearance, pay penalties on excess mining (2,463 cr INR - more than 300 million USD), and gain grama sabha consent for use of Adivasi land for mining (Business Standard, May 22, 2014). Though local informants indicate that the mine was never actually closed, on paper the mine was reopened and the lease was renewed in May, 2015. Blatant disregard for environmental clearances is quite widespread. Joda West was one of the 98 mines that operated without forest clearance out of a total of 176 mines in Odisha (Shah Commission, 2013). The total estimated illegal profit in the Joda circle, where Joda West is located, was 54,000 crores or more than 7.5 billion dollars (Shah Commission, 2013).

46 Mining at Joda West is “open cast by mechanised method and involves drilling and blasting” (Tata Steel, 2015). After the iron ore is extracted it is transported by rail to a local plant to make pellets, which are made by removing the soil. The pellets are then transported to Paradip port and in some cases exported to China. According to official documents, Khondbond Iron & Manganese Mine is located about 2.3 km south of Joda West and Joda East Iron Mine is located about 1.5 km north-east of Joda West Iron & Manganese Mine.

47 As of 2015, there was a proven reserve of 1.5 million tons of manganese ore and 4.2 million tons of iron ore (Tata, C1-S) in the 14.37 square kilometer lease area.
In this case, the mine is on Munda and Bhuiyan land and the FRA implementation is dismal. In lieu of agriculture and forestry, peoples’ livelihoods are now derived from wage labor through contractors, selling liquor, loading and unloading, truck driving, etcetera. The forest, which was part of an elephant corridor, has been cut completely. The requirement of ‘reclaiming’ mine areas by planting native species on overburden remains unmet. Water pollution is an issue and groundwater is unavailable, making agriculture impossible. The Shah commission also condemned the impacts of mining on the nearby Baitarani river (The Telegraph, 2014), as seen in Map 2). Recent labor unrest in Joda has been related to mechanization that replaced jobs over the past three years. In general, laborers make about 350-400 rupees per twelve-hour day. Both Adivasi men and women work in the mines, including local and migrants from Odisha and Jharkhand.

There are eight compensatory afforestation sites linked to Joda West (see table below). My interest in Joda West was spurred by the Tala Raidiha plantation, particularly the 2018 patches, which we came across while passing through the area. On investigation, I found that several CA sites were associated with Joda West affecting a total of 1,251 hectares across 8 villages, once of which was the largest CA plantation to date by a large order. In this case study, I start with the histories of several of these sites with a focus on Tala Raidiha plantations (2010 and 2018 plantations in Banspal block). I then discuss the five villages which will be affected by Joda West’s proposed expansion. For clarity, I will refer to the CA sites as Joda West CA plantations and the mine as Tata Joda West. I will differentiate the FCA proposals as the 3rd RML (third renewal of mining lease) and the proposed expansion.

5.3 Tala Raidiha, 2007

Before a single sapling was planted at Tala Raidiha, the plantation was already contested on the basis of threats to livelihood and dispossession. In September 2007, in total 4,588 hectares across Keonjhar had been identified as “suitable” and “unencumbered” sites for compensatory afforestation, comprising mostly of podu commons (Office of the Divisional Forest Officer, Keonjahr, 2010). This was not new, as described in the previous two chapters.
Table 10: Tata Joda West CA, past and proposed

<table>
<thead>
<tr>
<th>Name of Village</th>
<th>FCA Proposal</th>
<th>Year</th>
<th>Size</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tala Raidiha</td>
<td>3rd Renewal of Mining Lease</td>
<td>2010/2018</td>
<td>250.000 ha</td>
<td></td>
</tr>
<tr>
<td>2. Maidankel</td>
<td></td>
<td>2010</td>
<td>146.216 ha</td>
<td>Penal CA</td>
</tr>
<tr>
<td>3. Naranpur RF</td>
<td></td>
<td>2010</td>
<td>150.000 ha</td>
<td>Penal CA</td>
</tr>
<tr>
<td>5. Benidihi</td>
<td></td>
<td></td>
<td>136.026 in 3 patches</td>
<td></td>
</tr>
<tr>
<td>6. Kaliapani</td>
<td></td>
<td></td>
<td>29.772 ha</td>
<td></td>
</tr>
<tr>
<td>7. Pitanali</td>
<td></td>
<td></td>
<td>63.680 ha</td>
<td></td>
</tr>
<tr>
<td>8. Godinarada</td>
<td></td>
<td></td>
<td>231.760 in 2 patches</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1,251.386 ha total</td>
<td></td>
</tr>
</tbody>
</table>

Map 2: Tata Steel Joda West - Proposed Expansion

![Tata Steel Joda West - Proposed Expansion (730.635 ha forest land)](image)

Proposed Joda West Mine Expansion ^ Joda East Mine ^ Baitarani River
Plantations of commercial species on shifting cultivation lands had been frustrating Adivasi communities for decades in Keonjhar. When traditional podu lands were taken over for plantation, communities were pushed to cultivate elsewhere, and locally useful trees were cut to make way for commercial species. The results of the RTI confirmed that this policy was about to be amplified to a mass scale, only a year after the passage of the Forest Rights Act.

The largest plantation was the 250 ha CA plantation for Joda West against the third renewal of the mine’s lease. This was planned in Tala Raidiha (known on paper as Gol(i)abandha Raidiha). The year before (2006), according to civil society reports, Adivasi leaders, including the village head, began organizing at the village and pidha-level and ultimately met the Collector. Community organizers who were associated with rights-based organizations worked to link village-level processes. Another Juang village, Fulbadi, had successfully stopped a plantation by halting the establishment of a nursery. This motivated other villages to respond, and file the RTI application.

Based on the results, leaders and activists sent dozens of grievances and petitions to the forest department, in particular denouncing the plantation of non-browsable/inedible, commercial species which were harmful to livestock. When the Forest Department failed to respond to these concerns, more than 1,100 women and men left their fields to hold a rally in the district capital on December 3, 2007. This marked a monumental show of Juang and Bhuiyan strength, potentially the first post-Independence rally after a long history of active Adivasi political articulation and resistance during colonial times.

Their demands included:

1. Stop plantation activities on Adivasi land and take steps to record the land.
2. Stop plantation on 4588 hectares land being demarcated by the companies for compensatory plantation during coming years.
3. Cancel all the proposed mine and industries from Juang Pidha (traditional domain) and preserve forest, land, hills & other means livelihood.
4. Identify all the un-surveyed Juang villages and issue land records to all the families.
5. Cancel the proposal to amend 1956 OSATIP law allowing the land transfer from Adivasi to non-Adivasis rather make the law more stringent.
When a civil society worker showed me the report, he brought two photos to my attention. In one photo, a man has a plough in hand, indicating a message similar to a strike—we have left our work to come here and protest. In another, women came to protest carrying small children.

Because of the show of strength, the first ever dialogue between Adivasi leaders and the administration was arranged on December 27, 2007.\(^{48}\) The minutes of the meeting reveal significant back-and-forth (Office of the Collector and Additional District Magistrate, Keonjhar, 2007). After the Juang leadership expressed their grievances, the DFO responded that only 5% of the mixed-tree plantations are commercial species and do not affect existing trees. The Tahsildar told the Juang leadership that lands under the AAA category (Abad Ajogya Anabadi—“Uncultivable Wasteland”) “have been provided under Compensatory Afforestation proposal.” Juang leadership responded that the Abad Ajogya Anabadi land category cannot be allowed for compensatory afforestation because they and their ancestors cultivated those lands for years. They refuted the DFO’s claims that no trees have been felled with examples of Fulbadi, Kadalibadi and Budighara villages where locally-useful trees were cut. All of these concerns were framed with the historical injustice of Adivasi dispossession. Though it is not in the minutes, NGO reports mention that the proposal of plantation on 4,588 ha was “scrapped” or “postponed”. This also corresponds with a window from 2006-2009 when funds were not released for CA from the central government to the States.

\(^{48}\) The meeting was convened by the Additional District Magistrate at his office. According to the official minutes, the DFO, Sub-Collector, Tahsildar, and Special Officer (JDA)* were present. The Juang representatives included Sri Madhusudan Juang (Kundhei), Laxman Juang (Guptaganga), Madan Juang (Toranipani), Ramesh Ch. Juang (Uperdiha), and Jagat Juang (Duarsuni). *The Juang Development Agency is a special “microproject” of the Indian government to “take care of the special needs of the Juang People” which works in 35 villages of Banskta Panchayat Samiti in Keonjhar District.
Map 3: Tala Raidiha (2006) featuring traditional boundary, plantation polygon, and revenue lowlands
5.4 Tala Raidiha, 2010

By 2010, the Keonjhar Forest Division’s compensatory afforestation agenda was back on track, including the plantation at Tala Raidiha. A nursery was set up near Tala Raidiha (Map 4). Tala Raidiha community members told me that they were engaged as workers in the nursery, but did not know the details of the project. When they found out that the saplings they were tending were destined for two of their shifting cultivation patches—Kukurchua and Purnadihi—they immediately began to organize to protest. Purnadihi was the land where their ancestors had lived and farmed, as evidenced by the mango and jackfruit trees still standing there. An old mango tree marked the site of the old Durbar hall. Moreover, this land was claimed under the Forest Rights Act. They had received titles. They were confounded: how could a plantation be taken up on their ancestral lands, especially given that their rights had been recognized?

Thus, asserting rights as forest rights holders became the primary strategy to stop the commercial teak plantations—which they saw as a threat to their livelihood, food security, livestock and forest ecology. When nothing came of their local-level complaints, Tala Raidiha started to escalate their grievances to higher administrative levels. A second RTI application revealed the extent of planned plantations across Keonjhar, with information about species diversity (reported in the previous chapter). After leaders spread the word through the pidha system and mobilized community members, more than 2000 men and women from 58 villages came to protest in Keonjhar. As a result, a memorandum was given to the Chief Minister and the PCCF (highest forest department authority in the state). When this bore no result, a month later, through civil society facilitation, two women leaders went to meet with the Odisha Governor and the PCCF directly.

The high-level bureaucrats did not immediately grasp that seemingly innocuous ‘greening’ efforts pose risks to Adivasi livelihoods. Ultimately, they took the communities’ concerns in mind: “Eventually [the Governor] was convinced and ordered his PA to issue a notice to District Collectors to not take land in possession. And—if they are going to continue—they should change the species to beneficial ones” (Interview, January, 2019). The Governor also “assured
that an inquiry committee will be sent” to investigate conflicts between forest rights titles and plantations (Civil Society Report, 2010).

Regardless, plantation preparations continued according to schedule. Tala Raidiha’s podu fallows were cleared and workers from neighboring villages dug pits (Map 5). Upset upon seeing others working on their lands, some from Tala Raidiha also joined in. The project called for a quarter-million saplings to be planted and the nursery already had more than 90,000.

Map 4: Tala Raidiha - April 4, 2010
When planting began, the Juang leadership decided that Tala Raidiha would stage a sit-in demonstration outside the headquarters of the Forest Department in Keonjhar Town, and Juang and Bhuiyan villagers from across the region would join them in solidarity. The timing of it allowed them to capitalize on the ongoing Monsoon Session of Parliament. One organizer reflected about the spontaneity of the dharna: “We had no idea how long we would be sitting there before the administration met us. We had never organized anything like this before” (Interview, 2019).

On July 30th, 2010, more than one hundred people camped in front of the new DFO’s bungalow. The district administration agreed to meet with the Juang and Bhuiyan leadership after two days and significant media attention. The leaders raised Tala Raidiha’s grievances and placed them within the broader pidha-wide concerns. According to one organizer present at the dharna, the DFO asked why they were being “negative” and resisting plantations. The leaders responded:
“Why are you not taking consent from the Grama Sabha before plantations? And why these commercial species?” Further, they stated, “We are not against plantation but you are planting on our podu land and these species are not useful. You must stop” (Interview, 2019).

The administration promised to sort out forest rights claims and to not undertake plantation without local consent and consultation about species-selection. This was the third such promise from administrators across different levels in a few months’ time. The organizer recounted that the people specifically asked the DFO, “We have a long experience of officers giving us assurances and not doing anything. So how do we know you will do it?” And according to him, the DFO said: “Agar koi bhi ped lagaega grama sabha ke consent ke bina, toh mujhe jute se madna” meaning “If anyone plants trees without the grama sabha’s consent, you can give me a shoe-beating.” After the meeting was over, the Adivasi leadership insisted on a photo with the DFO, despite his unwillingness, to have convincing proof of a successful campaign for their communities.

It turns out communities needed to keep their shoes at the ready. Within a few days of this “win,” local forest officers returned to Tala Raidiha, determined not to lose their investment in the nursery and saplings. Their antics forced the villagers to hand-deliver grievance letters to the DFO nearly every day for a week. In one such letter, they write, “How many days will we have to leave our daily wage labor and travel to remind you of the resolutions after our last dharna? To interrupt the plantations? And to demand apologies for the khaki-clad bullies?” Another letter claimed that the forest department was able to bribe some villagers with liquor and money to fabricate a statement that the villagers were merely mobilizing due to NGOs. A news feature alleged that “the forester at Raidiha gave villagers Rs. 1,100 for a ‘community feast’ and the money was returned to the DFO by the villagers warning him not to try giving any more bribes or else there would be widespread public outrage” (Sahu, 2010). In another interview, one of the village elders recounted the back-and forth with the Forest Department regarding the plantations, and said that, “When the FD ranger came [to insist for plantations], he said that this land belongs to the government. We told him, ‘We won’t listen to you,’ and ran them off. Our late leader even chased them with weapons.”
It is particularly striking that two different records exist for the August 7, 2010 meeting between the local forest officials and the villagers. One set of minutes (by the Forest Department) is of a morning assembly in which villagers agree to the plantations with a few marginal conditions in place. The minutes also state: “The Range officer inquired about the abuse faced by the villagers. Village people said that no such incident occurred.” Another set of records is for an afternoon assembly. In this set of minutes, the community condemns the plantation and reiterates unequivocal protest. They record that, “Village people’s life, livelihoods and traditions are deeply linked with the forest... plantations put an end to this...the decisions which were taken during the dharna should be obeyed by the forest department.”

Day after day as the villagers traveled to Keonjhar by cycle and bus to hand-deliver grievances, the DFO grew exasperated and ordered the officers to resolve the issue within three days. On August 11th, 2010, a joint verification of the villagers’ forest rights claims and titles for the proposed plantation site Purnadihi took place. Representatives of the Revenue Department, JDA, and members of an NGO (a different one from the one who had been following the issue) were present. The joint verification revealed another twist in the story: the titles held by the villagers did not correspond to the plots they had claimed at Purnadihi (Map 6). The titles were for parcels in a dense sal forest on a far-off corner of their village area (the northern edge of Plots 1, 5, 10 in Map 1), and since clearing trees is illegal they would be useless for agriculture. It was clear that there was a deliberate undermining of the rights recognition process. This also meant that the basis of their argument—that the plantation overlapped with their individual forest titles—had fallen through.

After learning that their titles for were for lands elsewhere, they wrote in shock to one of the officers in charge of tribal welfare for answers: “Did this happen through the Forest Department because we are protesting the plantations, or did the Amin (settlement officer) do this [at the time of our claims]? ... Whoever cheated us, whether it is an individual or a government department, should be punished and we should get justice” (Grievance dated 2/8/2010 translated from Odia.)
Map 6: Tala Raidiha IFR Plots

Image 11: Map on backside of IFR patta (plots 1, 10, 81, 282, 262).
What no one had anticipated was that before a plantation is initiated, the selected plots of non-forest ‘wasteland’ are legally transferred from the revenue department to the forest department. Protesting against plantations once the lands have already been transferred is a tough strategy. In the case of Tala Raidiha, the lands were transferred to the forest department in 2005 (Map 7). Thus, when the villagers claimed individual forest rights on the plots at Purnadihi in 2007 or 2008, it was on land already earmarked for CA. Villagers’ total lack of information about the land transfer indicates a lack of consultation with the gram sabha, which unfortunately, as per Section 33 of the Odisha Forest Act, is not required during the notification process of a Protected Forest. However, community’s historical use and presence on this land was ignored during the preliminary land identification process, when land is certified as “free of encumbrance and encroachment” by the revenue department.

In the end, the villagers of Tala Raidiha were able to successfully stop the plantation midway. Large amounts of the proposed plantation site were left unplanted. On e-Green Watch, two patches are mentioned: 82.84 ha and 45.00 ha, totaling 127.839 ha of the planned 250 ha. The number of saplings reported to have been planted is 204,543; this is the typical density of 1600 plants/ha used for block plantations. The total expenditure reported was 27,46,039 INR (about 60,000 USD) over three operating years (eGreenWatch).

Part of the plantation was cleared the year immediately after plantation. On a visit to the plantation patch at Kukurchua, I found that trees were also planted within the village boundaries of Hatsila and Kadalibadi. Today, despite the rejected project and reclaimed land, the Forest Department still owns the entire 250 ha site. According to e-GreenWatch and as confirmed from the Odisha Gazette, this plantation was never notified as a Protected Forest as per law. When I requested more information from the Forest Department, there was no response. As flagged by the CAG, it is illegal for the forest department to undertake activities without this notification. This also has implications related to locals’ rights on the afforested lands.
5.5 Sathkandia Pidha, 2018

A year after the victory, local activists found out that the project had been restarted in Tala Raidiha. When they went to meet with the village leader, a major force in the previous years, his position seemed to have shifted. They came to know that “gaon adha-adha ho gaya,” i.e., “the village got divided.” In 2017, the leader passed away. The same year, the community decided to clear more patches of teak plantations at Purnadihi to grow rice, though tenacious teak saplings continue to dot the landscape amongst the local paddy varieties. Little by little, the land was reclaimed. But the mandate to afforest 250 hectares – only half complete—was still pending, and like a stunted teak sapling was bound to resurface.
According to a high-level forest officer, when a community shows resistance to a plantation project, the Forest Department’s strategy is to implement it in phases. In the case of the plantation in question, the second phase of the project emerged in 2018. In response to resistance from villagers in Tala Raidiha, the FD decided to shift the remaining 122.161 ha of CA to two neighboring villages. Our research team stumbled across one of these freshly planted patches, Phuldihi, described in the Appendix “Reaching Sathkandia Pidha.”

At Phuldihi, when we asked senior villagers why they had allowed the plantation, they explained that it happened very quickly and they had no knowledge of it until it was too late. We could not talk to the cultivators who had been displaced by the plantation as they had gone for seasonal migration elsewhere.

Image 12: Plantation at Phuldihi. Workers tend to the saplings while others clear the brush in the distance.

49 In total we found four small patches, conflicting with the broader claims of a 122-ha plantation. However, since 1600 plants/ha were planted, it could be that the rest was under the category of “Assisted Natural Regeneration,” and the requirement to have 1000 plants/ha on average was met. Pillars marked the periphery.
The remaining three patches, two small and one big, primarily affected villagers from Tala Baitarani. Tala Baitarani is not a Juang village and the majority of community members are Patro caste (Dalits) living with a few Gouda (shepherds) and Bhuiyan Adivasi families. The families most affected by the plantation were the Adivasi families. Seven families used one of the patches, the largest at about 13 ha, for settled cultivation and grazing. The villagers’ comments about the
project were mixed. Some argued that since they lacked the “manpower” for cultivation, letting
the land go to the FD for five years (the amount of time stipulated by the Forest Department to
let the trees grow) made sense. Others said that the freshly planted teak trees impacted grazing
and they were forced to graze livestock in the forest. One person told us, “Two elders agreed,
what could we do?” and expressed fear of a case being filed against anyone who harmed the
plantation.50 One family, the only landless family in the community,51 did not allow their land
to be planted over. They told the Gouda boy who was a watchman/leader that they were
landless and clearly demarcated the boundary using a dry tree.

Interestingly, each of the patches in the second phase of plantation (2018) were originally
transferred to the Forest Department in the name of other mining companies’ CA. To give one
example, as per Bhulekh and the Odisha Gazette, the land at Phuldihi (Guptaganga village) was
alienated in 2003 and notified as a protected forest in the name of Dalpahar mines in August
2009. What appears to be pillars from a previous project (Image 14) were visible (right), with
pillars from the new project erected next to them (left). The old pillar matches those seen across
Tala Raidiha and surrounding villages from other older plantations.52

It is difficult to confirm exactly why the cancelled plantations did not happen. It is possible that
since funds were not flowing from the Center from 2006-2009, the forest department changed
their annual operating plans. It is also possible that community resistance played a role. In the
FAC minutes for yet another plantation for Guptaganga village (Bolani SAIL), which was supposed
to be over 223 ha in 2013, the project was cancelled due to “strong resistance from the local
tribal population.”

50In reality the forest department in this district does not have a history of excessive policing. That said, many
villagers in Sathkandia Pidha expressed fear of going to jail for cutting plantations. They mixed this information with
stories of bravery and standing up forest officials unfairly exerting their power. In other parts of the state, the
situation is much worse. When we visited the forest department in Kalahandi South, an officer pointed to the
towering stack of thick files on his desk to demonstrate the criminality of the local people that he had to deal with in
this posting. And in other parts of India, conservation is militarized and local people mistaken for poachers have
been killed, see for example recent coverage of WWF in Kaziranga National Park.

51 The reason they were landless is because they were living in the wife’s village. Her brothers inherited their
parents’ land and the husband had no land in his village.

52 Meanwhile, the land at Tala Baitarani was alienated in 2006 and also notified in the name of Joda East mines, also
in August 2009. The projects would have started in 2010 along with the 250 ha. plantation for Joda West. There was
an old sign board there, from the original plantation, but it was no saplings were ever raised.
Regardless of the reason why the original plantations were abandoned, this confirms that even if a community “wins” and a plantation is stopped, the FD can access the same dispossessed lands and continue with the same commercial-plantation strategies in spite of promises made at every level. This is possible because the lands have already been transferred from the revenue department to the forest department. Whether plantations are done or not, the legal fact of the transfer remains. As per the Forest Conservation Act (1980), the forest department is supposed to notify these lands as protected forests, but to do so they have to settle the rights of the people who are occupying those lands as per Section 33 of Odisha Forest Law. Hundreds of thousands of hectares in Odisha are caught in this bureaucratic limbo and a new category has been made for them -- proposed reserve forest -- which is not a legal category (Vasundhara, personal communication, August, 2019). This allows the forest department to have ownership over the land without settling rights, and is one of the major reasons that the Forest Rights Act was disruptive (Kumar, Personal Communication, 8/8/2019).

To conclude the story of the 250-ha plantation at Tala Raidiha (and beyond), a final element is the project’s financial history. On the eGreenWatch portal, the Forest Department reports the expenditures for each year of operations as well as the total paid by the user agency, in this case Tata Steel (Table 11). There is a huge gap in payment and expenditure: despite the fact that 92% of saplings are reported planted, only 39% of the funds have been spent. How will the remaining five million rupees (approximately 70,000 USD) be used? In other areas in the same forest range, the forest department has installed fencing three or four years after the plantation works are undertaken, once the saplings are slightly bigger. Fencing is a large part of the budget and could be a good way of spending these funds—to the further detriment of community mobility and access to their lands—and potentially making money off-the-books too.

According to eGreenWatch and forest clearance documents, CA represents less than 1% of the total amount paid by Tata Steel to CAMPA against the renewal of Joda West’s third lease (98.27 crores or more than 20 million USD at the time of payment), with the lion share of the remaining payments against Net Present Value (payment for 50 years of ecosystems services of the deforested area). The Joda West mine was also recently in the news for providing luxury SUVs to
the Forest Department field staff as part of their Wildlife Clearance-- unable to be driven on the forest roads, they were instead used by high-level officials (Mohanty, 2019).

**Table 11: eGreenWatch summary data, Joda West Goliabandha Raidiha Plantation**

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Total Reported</th>
<th>Total Stipulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>127.839 ha</td>
<td>122.161 ha</td>
<td>250 ha</td>
<td>250 ha</td>
</tr>
<tr>
<td>Plants (n)</td>
<td>204,543 plants</td>
<td>24,432 plants</td>
<td>228,975 plants</td>
<td>250,000**</td>
</tr>
<tr>
<td>Density</td>
<td>1600 pl/ha</td>
<td>200 pl/ha</td>
<td>~900 pl/ha</td>
<td>1000 pl/ha</td>
</tr>
<tr>
<td>Expense</td>
<td>27,46,039 INR</td>
<td>4,31,252 INR</td>
<td>31,77,291 INR</td>
<td>81,17,000 (total paid)</td>
</tr>
</tbody>
</table>

5.6 Livelihood Impacts in Tala Raidiha

I asked one grandmother in Tala Raidiha about foods she ate as a child, to start a conversation about her relationship with the forest. She echoed what I had heard elsewhere: before, food was tasty but in lean seasons, people were so hungry they would have to boil and eat mango seeds. Now there is enough food, but it doesn’t satisfy. “Before, we used to get less rice,” she summarized. “Now, we eat more rice. Before we used to get more (food) from the jungle.” As several NGO workers explained to me, as a podu prevention programs, the government rolled out extensive rice ration programs in podu areas.53 By supplying rice, dependency on podu reduced. As a result, people reported that they stopped saving local varieties of seeds and their diet changed; in one village, they also reported that they started protecting the forests and echoed reformist language when referring to their traditional podu practices. Some theorized a

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53 They also supported orchard plantation and the creation of Adivasi “colonies” earlier on as “podu prevention program” (Kumar, 2014, p. 326). Mahakul also writes, about Kadalibadi: “The JDA report of 1990 reflects that the beneficiaries received seeds, agricultural implements and bullocks through podu prevention scheme. Activities such as the construction of water harvesting structures, nursery maintenance to demonstrate improvements in yields have been initiated in Juang villages. However, at present, 82 per cent of household still practice *podu* in the study village. On the other hand, major change is also observed in agriculture, as 92 per cent households adopted settled cultivation. JDA has got little success in providing alternative sources of income from agriculture, after 30 years of its functioning.”
The more cynical possibility behind podu prevention: given the mineral speculation in Keonjhar, clamping down on podu would liberate more commons for mining.

However, in Sathkandia pidha mining is not prevalent and podu still continues. “We don’t have land,” the same grandmother’s daughter added. “Podu allows us to produce something. There is no other way. This land belonged to our ancestors. If we lose it, then we don’t have anything else.” This was especially true in the village where we sat, Tala Raidiha. The 250-ha plantation is 62.5% of the village, which totals at 401 ha. Meanwhile, the land titled in the names of villagers is about 16 ha, or 5% of the village lands.

In the marital village of the second speaker, Kadalibadi, the situation is even more dire. Only 4.7 ha of lands are titled. Many of these lands are mortgaged to the handful of non-Adivasis living in the village (Mahakul, 2013). Whereas in Tala Raidiha there was just one plantation, in 2005, in Kadalibadi land records show transfer of lands to the forest department for CA plantations since 1992. This has caused an even greater land squeeze in Kadalibadi, so they have frequently made informal arrangements with Tala Raidiha on the other side of the hill to lease podu areas. Thus the 250-ha plantation in Tala Raidiha was a double displacement for Kadalibadi, which had sought lands there to improve their already-displaced situation. At the same time, the Kadalibadi villagers were those who were hired by the FD to do the plantation labor, while the Tala Raidiha villagers protested.

While sitting on the verandah, we tried the ten-stones exercise to understand the Tala Raidiha food basket. After a lengthy explanation and discussion, the response came: 50% of the food basket comes from the forest (majority switching between podu and forest, depending on the season); 20% comes from the titled agriculture lands; 20% from the market; and 10% from the PDS ration system. It is remarkable to me that even though the ration system contributes to only 10% of people’s food basket, it has functioned to shut down podu in many places. I am also sure that government officials would put the dependency on the PDS system much higher; in fact, one person from the Juang Development Authority suggested to me that 60% of Juang food basket comes from the government ration system, by the communities’ general responses of 10-20%, that is an outlandish overestimate.
I asked the grandmother how she learned about the forest. How did she know what to collect and where? She answered that elders take children to the forest and show them what to collect, explaining what is what: “This is saag, this is mushroom...” When I asked if young people these days are interested in learning about the forest, she and others sitting on the verandah with us responded, “Children don’t go to the jungle, so how would they know?” But they also added that they teach their children as much as they can. One woman, holding a newborn baby in her arms, said, “From the time children are this small, we take them to the forest.” She noted, “In the afternoons, this village is empty! Everyone is in the forest, children included.”

I asked about what people would do, how their food system would change, if plantations took over the full 250 ha in Tala Raidiha. The response came that they would become mazduria, wage laborers. When I asked what kind of labor they would go for—would it be construction or agriculture labor; would they migrate or stay? —the grandmother’s answer came as a non-sequitur. “When I was little, I used to do mazduri,” she shared, holding up two fingers. “We were paid only 2 rupees a day.” Perhaps my question was lost in translation, but I also believe that calling her to imagine her livelihood without podu generated memories of past exploitation. In many ways, plantations are indeed from a different era, obsolete techniques reifying outdated power structures.

5.7 Proposed plantations: Bhuiyan Pidha

As covered in the section on the Joda West mine, Tata Steel is proposing to clear 730 ha of natural forests to expand its captive Iron and Manganese mine at Joda. Five villages in Bhuiyan Pidha are proposed for plantations linked to it, the same project linked to the plantations at Tala Raidiha. The villages include Tana, Benidihi, Godinarada, Pitanali, and Kaliapani.

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54 Another group of women in a neighboring village pointed out in an interview that young people can’t be told what to do anymore. They threaten to run away or commit suicide if they are bossed too much by their parents; the parents are afraid. In her book In the Shadows of the State, Alpa Shah (2010) also talks about migration, specifically related to brick kilns. She finds that young Adivasis are drawn to migrate more to explore independent living (and often romantic relationships), and pushes back against the characterization of migration as purely economic exploitation.
5.7.1 Current status of the plantation sites

According to official documents dated July 2016, plantation sites in the five villages were selected by the revenue department from a district-level compensatory afforestation land bank. Currently revenue lands, upon Stage-I clearance, they will be transferred to the Forest Department and must be notified as a Protected Forest. Despite the fact that project approval is not yet at this stage, signboards and pillars have been raised across the five villages. In three villages visited, communities reported that they noticed the signs, and surveyors mapping and evaluating the sites, but were unaware of what they meant as they were written in English. This indicates that they were neither consulted nor was their consent sought as part of this process. Moreover, community members confirmed that overlaps exist between the proposed sites and long-standing village podu lands, as visible on satellite imagery. A woman from one of the plantation-affected villages also expressed her dismay that the proposed site is in an area where important medicinal plants are collected.

As part of the site selection process, the revenue and forest departments issue a joint verification certificate which confirms that the plantation sites meet four or five criteria. The certificate uploaded for this project is dubious in several ways. First, across the five sites, the lands are certified “unencroached” and “unencumbered” despite the historical land use for podu. In the column where this would be noted, the status of each plot in the land schedule has been left blank. Second, signatures of the revenue department officials are absent on the verification. Third, examination of satellite imagery revealed that two sites of the five are dense forests. This calls into question the project’s feasibility as an offset for 703 ha of deforestation at the Joda Mine, which requires an average of 1000 saplings per ha to be planted. Given that the broader forest clearance proposal is currently under review, these inconsistencies could still be identified by the Forest Advisory Committee and selection of alternative sites could be mandated.\(^{55}\)

\(^{55}\) Elsewhere, they have identified the presence of ‘well-stocked forests’ as well as ‘agriculture land’ through their Decision Support System software and required projects to find new sites.
5.7.2 Proliferating plantations

In the table below, I present data for all wasteland (anabadi land\textsuperscript{56}) for each of the five villages, as per the village land records on the online Bhulekh database.\textsuperscript{57} The total anabadi land per village varies from 160 ha to 700 ha and represents the majority of village land as lowland individual holdings tend to be small. In three of the villages, there is a history of CA plantations already: Tana, Benidihi, and Pitanali. In Tana and Kaliapani, plantations other than those linked to Joda West are in the pipeline. Across the four villages with past or planned plantations, at least five different mining companies’ CA is represented in addition to Joda-West, though many more are unaccounted for. Additionally, in Pitanali, land has also been land banked for an industrial landbank, overlapping with the plots proposed for plantation. The graph below shows the outcome of incremental transfers of common lands to the forest department. The yellow bars indicate the anabadi lands still remaining with communities. Red bars indicate when the village’s lands are over-committed. The forest department has almost exhausted the village commons in several villages for plantations, including in Godinarda where the entirety of the village commons has been land banked for plantations (This is a level of intensity we see replicated in Thuamul Rampur.)

| Table 12: Anabadi land status in five villages proposed for plantations (Joda West CA) |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
|                                 | Tana (830 hh)                   | Benidihi (930 hh)               | Kaliapani (119 hh)              | Pitanali (281 hh)               | Godinarda (281 hh)              |
| Total anabadi (ha)              | 658.56                          | 416.54                          | 162.70                          | 164.03                          | 231.51                          |
| Already mutated (ha)            | 64.33                           | 204.37                          |                                | 147.65                          |                                |
| Other proposed mutation (ha)    | 57.63                           | 13.80                           |                                |                                |                                |
| CA for Joda West (ha)           | 243.93                          | 136.03                          | 29.77                          | 63.68                           | 231.76                          |
| CFR                             |                                | 129.10                          |                                |                                |                                |

\textsuperscript{56} These lands are traditional shifting cultivation lands which were labeled as ‘wasteland’ during the survey and settlement process due to their slope.

\textsuperscript{57} This is a combination of cultivable and uncultivable wasteland.
In one village, the presence of community forest rights (CFR) is blocking alienation of land. However, according to civil society workers, the amount and location of land claimed under CFR is known, as well as the amount titled, yet the location of the titled lands has not yet been communicated to communities. This limits their ability to safeguard their rights in the face of upcoming plantations, though the recognition does present an opportunity, and the community rights stand regardless of bureaucratic lags. There is some additional complexity regarding the validity of community forest rights on legally non-forest lands such as anabadi lands, which was addressed in the Thuamul Rampur section in Chapter 4.

5.7.3 Livelihood impacts of incremental dispossession

Benedihi in particular is an example of how over time land was transferred to FD, resulting in a significant cumulative loss. Land alienations in 1994, 1997, 1998, and 1999 totaled 204 ha (see map). Proposed patches total an additional 136 ha. They are often adjacent to the former plantations, in many cases on the opposite hillside. Given that Benidihi’s total anabadi lands are

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58 Here, however, the nodal agency recognizes that if CFRs are not claimed on anabadi lands, there will be few other lands that are eligible (personal communication, 2018).
416.54 ha, this means that more than 80% of common lands will be held by the forest department by the time the proposed Joda West expansion receives Stage-I clearance.

Meanwhile, the status of the historical plantations is mixed. Some trees are still standing, other patches have been reverted back to podu.

According to one villager from Benidihi, forest products collected from natural forests include mahua, mushrooms, mangos (to eat, pickle, and sell), kendu (to sell), and dry wood for fuel and for building houses. Plantations would affect their access to these products, as well as grazing: “Before, the jungle provided food for us and our livestock. Now, [after plantations], there isn’t even grass.” In Benidihi, additional precarity is also created by an unrepaired dam and resultant lack of irrigation, affecting agricultural production. This led her woman to reflect, “Without the forest, how can we live? We run our households from there.” Despite the lack of recognition for customary tenure, she reported that the majority of people still practice shifting cultivation. Yet at the same time, people have lost interest in agriculture, migration is increasing, and there are broader changes in crop preference (away from millets like mandia and gangei). Reflecting on the information that additional plantations were on the horizon, she lamented, “The Forest Department is taking everything. Our land has gone into their lands. These plantations need to be stopped.”

The forest department seems to take for granted communities’ eventual cooperation with their plantation mandate, or else they would consult more intentionally. Instead, huge fencing projects and undemocratic methods of decision making are employed to ensure the plantations are established. In one case among the proposed plantations, certain influential people (non-Adivasis) supported the forest and revenue departments’ land banking missions, taking decisions that did not reflect the majority opinion. When the Adivasi community rejected this decision, the outcome was a split in the village.

In another of the five villages, a long barbed-wire fence was erected in dense jungle on top of the hill as well as stone walls four or five feet high to enclose an existing plantation. The areas within the enclosure were planted two or three years before in ANR gap plantation style—teak saplings mixed in with naturally growing species like sal trees. Though this was intended to
integrate new saplings within old forests, the entire area is blocked off for villagers and livestock. Villagers noted that it was people from a neighboring village who were hired to build the fence, again showing a non-consultative strategy by the forest department that relies on dividing rather than uniting communities.

Communities retain certainty that the lands are theirs, even if the trees are belong to the forest department. Sometimes plantations were cut to make room for podu. However, overall, communities lacked interest in cutting the trees to sell: “We are not that chalak (clever/mischievous). We don’t even know the going rate.” When asked whether the people use the teak trees for any ‘business purpose’ (i.e. they cut them to sell), the answer was always no: they belong to the forest department.

5.8 Conclusion

In the case of Tala Raidiha, villagers’ dedicated advocacy reached the highest authorities of the state. They used moral, rights-based, and ecological arguments to attempt to influence what species were planted where. However, the plantation program continued without substantive changes; it was implemented in ‘phases’ as the forest department seized opportunities once villagers cooled down. The fact that villagers in Tala Raidiha stopped the plantation halfway, and only 127 of 250 ha was ultimately planted in their village, has no bearing on the legal fact that 250 ha of their commons have been transferred to the forest department. At any point, the FD could return to take up additional plantations on those lands, perhaps to fulfill projects where communities raised protest elsewhere.

In the Tala Raidiha case, laws designed to protect Adivasi citizens’ entitlement to livelihood and self-governance, such as PESA, were not applied and other safeguards related to the declaration of state forests were also disregarded. In Tala Raidiha, lands which should have been claimed under the Forest Rights Act were ineligible due to their earmarking for plantations, and in other villages, the Forest Rights titles were for marginal lands, if any. Information was not shared with local communities; only Right to Information requests revealed plantation plans. This undemocratic and unresponsive functioning severely exhausts the limited time, resources, and
energy of those fighting for alternatives to plantations. Despite their fatigue, communities maintained unwavering claims of self-determination on their lands. Now, the same mine may displace five more communities from their lands, three of whom are actively practicing podu on the proposed plantation sites.
6 Conclusion

6.1 Study summary

In this thesis, I explore the implications of state-led forest restoration through India’s compensatory afforestation program. Overall, CA has failed to harmonize with democratization of forest governance and led to negative outcomes for communities’ livelihoods and tenure security, while “offsetting” environmental destruction elsewhere. This policy sits at the intersection of environmental offsets, climate change mitigation, and forest restoration. Given the urgency of climate action, these three elements are poised to reshape the face of forest governance in India and beyond.

In theory, the Forest Landscape Restoration (FLR) approach is attentive to the needs of multiple stakeholders across an ecologically complex landscape. While India has committed to the FLR approach, my work shows that there is a gap between FLR principles and current practices. Ongoing forest restoration efforts are focused on afforestation rather than “natural” forest regeneration and have done little to encourage community-based ecological restoration. This is despite the Forest Rights Act and PESA which recognize village communities’ rights over forests and other natural resources.

In Odisha, the failure of restoration programs to harmonize with forest tenure reforms leads to tension between plantations and podu that are felt spatially, politically, and ecologically. Communities observe that their podu patches are targeted for plantations, in continuity with historical “podu prevention” schemes. This is confirmed by forest clearance proposal data and CA schemes. Most proposed CA sites are not in districts with the largest forest diversion (deforestation) to be offset, but in Thuamul Rampur, where podu is a major livelihood source and tenure over land arbitrarily labeled “uncultivable wastelands” remains unrecognized.

This superimposition of plantations over podu is enacted through the simplification of biodiverse ecosystems as monocultures, using chemicals to increase production on soils that have been cultivated through careful crop rotation for generations. This thesis has largely revolved around
questions of communities’ consent to plantations on their lands. In worldviews that see land as “selfsame” (Tuck, Guess, Sultan & 2014), one also wonders whether the land itself consents (Prabakara, 2018). Plantations’ production of pathogens, low survival rates, and reliance on synthetic chemicals could be read as an answer to that question.

Though I used the ten-stones method as a rapport-building tool more often than a data collection tool, the process and methodology were instructive. When answering a question about where their food baskets come from, community members would often place at least half of the tokens in the “forest” category. Knowing that dependence on non-timber forest products has reduced in recent years, I asked for more details. I learned that to them podu fell into the category of “jungle,” not “agriculture” as was my assumption. Meanwhile, the revenue department legally sees podu lands as “non-forest state lands” and the forest department sees podu as “non-forest” to the extent of being anti-forest. This is evidence that what Sivaramakrishnan identified as the false colonial divisions between agriculture and forest, and between public and private property, has not fully taken hold outside of the state. It also shows that agroforestry worldviews still persist despite all attempts to occupy them.

In the context of broader Bonn commitments, one cannot expect major transformations in the restoration techniques and procedures. The flawed policies, which are based on centralized funds, offset logics, irresponsible land banking, failure to harmonize with forest rights and neoliberal mentalities, have negative impacts for communities, and may be ultimately reverted to podu. As communities grapple with the threatening Supreme Court orders (February 2019 onwards), restoration proves to be another important agenda for movements and civil society to redirect before it undoes decades of work democratizing forest governance.

6.2 Additional lines of inquiry and action

This study has focused on the impacts of compensatory afforestation in non-forest revenue lands in Odisha. While Odisha is an important place to study because it is home to over eight million Adivasis, it is unique in its history of land classification. It is also one of the few states where Adivasis still practice shifting cultivation. In order to understand the potential impacts of
forest restoration across India, one would need to study a variety of locations rather than
generalize the experience in Odisha. Moreover, this study does not cover degraded forest
lands and revenue forests though both should also be studied to understand the impacts of CA
on forest livelihoods. A study of the political economy of compensatory afforestation requires
more attentive analysis of its biggest financial component: Net Present Value payments. Many
plantations are undertaken with NPV funds which are not linked to specific proposals. Finally, a
study of the process of land banking and dialogue with the revenue department is key; it is easy
to target the forest department for its implementation of the compensatory afforestation policy,
but it is the revenue department who identifies the lands and fails to recognize rights in the first
place.

6.3 Healing in the Plantationocene

The creative minds working to search for alternative terms to the word “Anthropocene” have
come up with a useful alternative, relevant to this study: “Plantationocene” (Haraway, Ishikawa,
Gilbert, Olwing, Tsing, & Bubandt, 2016). In her earlier work, Tsing (2010) describes plantations
as “machines of replication” which are “energized” by the potential of proliferation, meshing
well with globalized, mobile capital. The impacts of this “single asset production” include
exhaustion of people, plants, land, and soil; a radical loss of home/alienation for those displaced
and those assimilated by the plantation; proliferation of pathogens and virulence (Haraway,
Tsing, Mittman, 2019). For these very reasons, Tsing points out, plantations cannot proliferate
everywhere. They are patchy and have “unruly edges” where they are contested by those whom
they impact. This resistance is seen for example in the plantation studies done by Caribbean
scholars, like Jean Casimir’s description of the “counter-plantation” (2010) and Sylvia Wynter’s
description of the gardens and plots managed by enslaved Africans (1971). In the context of CA
in India, it is seen in the subversive reversion of plantation land to its original land use, or direct

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59 A few states to begin with would be Jharkhand, Chattisgarh, and Andhra Pradesh. In terms of the relationship
between shifting cultivation and contemporary dispossession, the Northeast states of India would be important to
study.
60 Given that the FRA has complicated eligibility on non-forest lands, the category of lands that I studied, there will
potentially be more clear-cut contradictions between forest rights and CA on degraded forest lands and revenue
forest lands.
action against the project at the time of its initiation (for example, destroying teak saplings as described in Sen, 2017).

In the Plantationocene, “only one stand-alone asset matters; everything else becomes weeds or waste,” and then “when an asset can no longer be produced, a place can be abandoned...the search for assets resumes elsewhere” (Tsing, 2016). How does this cycle of abandonment function in an economy of repair? Spaces that are presumed abandoned are valued anew, for additional asset production. Cree scholar Erica Violet Lee, and fellow University of Toronto graduate student describes in her article “In Defense of the Wastelands” how the concept of “wastelands” is applied to Indigenous lands, which become “spaces deemed unworthy of healing.” She describes how wastelands are perceived (“places where no medicines grow”), who classifies them (“the ones responsible for their devastation”), and what this pejorative label implies about those who live there (“unworthy of healing” and denied “safe haven”). This makes me wonder, in a repair economy, suddenly the wastelands are deemed worthy of restoration, but are they deemed worthy of healing? And the places of destruction that need to be offset, what does healing mean for them and those who call them home? Many scholars have foregrounded the need to prioritize rights and governance in FLR; perhaps healing has a place there as well.

Indigenous scholars differentiate healing from the politics of recognition and justice. Politics of recognition accommodates Indigenous peoples’ claims within an unchanging state structure (a sovereign settler state), which is structurally committed to “the dispossession of lands and authority” (Coulthard, 2015). According to Mohawk scholar Audra Simpson, in this context, consent is a “ruse” that “marks the inherent impossibility of freedom after dispossession” (2017). In the forest rights context in India, this resonates. The framework of consent is abused in the forest clearance process (Chaudhary and Aga, 2018), as seen through the dubious joint verification certificates and illustrious CA schemes that emphasize the passion of local

61 Lee’s reflection is grounded in a moment of women coming together, in this case while bearing witness to the expansion of logging in the territory of Mistahi-Sipi (Big River), Saskatchewan.
communities for plantations. It also explains why laws like the Forest Rights Act, which recognize rights--not grant rights--still are not implemented.

Audra Simpson suggests that these politics of recognition have the “implicit demand to forget” which she argues are “challenged by the counter that Indigenous people represent simply by (a) living and (b) knowing this” (p.5). Tuck also emphasizes the point, writing, “The opposite of dispossession is not possession. It is not accumulation. It is unforgetting.” This is where collective action like community-based restoration is more powerful than recognition of rights through Forest Rights Act, or any welfare scheme. Through restoration, communities can engage in processes of unforgetting. Recognition of rights to fixed pieces of land fails to identify that relationships with the land are not about being attached to a particular piece of soil,62 but to the stories of the soil and to the telling of the stories as well. Restoration without stories will do little to transform our world into the one that is possible.

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62 The British even believed that Adivasis lacked a “healthy attachment to land” because they failed to convert it to farms and would move if they had a problem with the zamindar (Sivaramakrishnan, p. 50).
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Appendix 1: Personal Introduction

In this appendix I am inspired by Karen Boora Mirra Boopa Marten, who took care to personally introduce herself, her family, and the territories she connects to in her article, “Ways of knowing, being and doing: A theoretical framework and methods for indigenous and indigenist re-search” (2003). She cites a fellow Quandamooka woman as explaining, “The protocol for introducing one's self to other Indigenous people is to provide information about one's cultural location, so that connection can be made on political, cultural and social grounds and relations established” (p. 204). I attempt this here.

Both sides of my family have agrarian roots. My father’s mother grew up in southern Ohio, until her father’s dairy farm was bought by the state to be submerged for a reservoir, later becoming a state park. They moved from Shawnee and Miami land in Ohio to Peoria, Potawatomi, and Miami land in Michigan to start a new dairy farm with the settlement money. My grandmother broke norms by marrying my grandfather, a Colombian immigrant from an elite family in Bogotá. In Colombia, our family’s hometown of Popoyán is the present day territory of around 20 Indigenous communities, the largest being the Nasa, who are actively fighting for sovereignty over the lands in the context of paramilitaries and state repression. My grandparents settled in Wooster, Ohio, where the main trails of the Shawnee, Delaware, and Wyandot tribes intersect, and where my grandfather was a professor for several decades.

My maternal grandfather was also involved in agriculture, growing orange groves on the land of the Seminole and Calusa peoples in Sebring, Florida. His family roots in South Carolina, and personal rejection of the segregation norms in the South, led him to marry a Northerner—my grandmother—and become missionary teachers abroad (my grandfather teaching geography and my grandmother a librarian). Later joining the State Department, my grandparents raised my mom and her brothers in present-day Zimbabwe, Zambia, Venezuela, and Jamaica. They prematurely moved back to my grandfather’s hometown, Sebring, Florida to run the family grove-irrigation business.
Both my paternal grandfather and my maternal grandmother passed away in the month after I returned from field work.

When I look back at my grandparents’ combined histories, my interest in agriculture, politics, grassroots work, activism, and building cross-cultural community becomes clear. When I look back at our geography, our settler stories are clear as well, and I understand the genealogy of the obligations I feel. My positionality (though I prefer to call it ‘relationality’ as it is neither fixed nor one-sided) becomes clear: I have experienced life as a white woman, raised in suburban Michigan with intergenerational wealth, by college-educated parents with international connections. The lessons that have guided me along the way have taken place through conversations around different hegemonies that affected those in my social worlds: Global North/South, Caste, Gender, Class, Race, Ethnicity, Religion, Sexuality, Ability. I am grateful to those who have held space for these talks, taking on risk and vulnerability, sharing their experiences, and holding space for mine.
Appendix 2: Survey

**General village questions**

- how many families from which communities
- Forest uses?
- Agriculture crops? (Still growing millets or not?)
- Still doing shifting cultivation? (Why/Why not)
- IFR status in village?
  - Claimed
  - Titled
  - Identified
- CFR status in village?
  - Claimed
  - Approved
  - Who did it? (ie who has a copy of the file?)

**Past/Current Plantation #1 (copy for each)**

**Details**

- Have trees been planted on this spot (polygon from e-Green Watch)?
- How many years ago were trees planted?
- How big is the area?
- How many trees did they put?
- What is their current condition?
- Did they leave a board? (Tin or stone)
- Did they do fencing or any other barriers?

**Community involvement**

- Who did the Mazduri kaam? How much did they pay?
- Did they consult you first? What did the FD promise you or tell you?
- Did you try to prevent it or object? How did you go about that and who was involved?

**Land history**

- What was the land before it was plantation? How long has it been in that usage?
- Is there any history of patta during princely states here?
- Is there IFR or CFR on that same land?

**Impacts**

- How did the land usage change affect the community?
  - Food security/agriculture. Change in food crop selection.
  - Grazing animals
Collecting NTFPs
Access to area
Increased reliance on wage labor for survival
Migration (to a nearby city, to out-of-state)
Clearing new land for shifting cultivation
Feeling that forest is belonging to FD and not community

Future plantations

Plantation details

- Have you been consulted about any plantation in this area (show map)?
- Has a board been put anywhere here, or pillars?
- Has the FD recently come to survey this land? Have they told you anything about this?

Land history

- What are you currently using this land for?
- Do you have IFR or CFR on this land?
- When was the last time you planted a crop here?
- When was the first time you planted a crop here?

Response

- Based on your previous experiences with plantations, how do you respond to this proposal?
- What are your impressions of CA policy (explain deforestation offsetting)?
- What impacts do you anticipate from this plantation (see list above)?
- What kind of support, if any, do you need to respond to this proposal?

Other leads

- Was any other village using this land or consulted about this?
- Are there any other plantations besides this one?
- Are there any places with boards and no plantations (tin or stone)?

- Was there ever a time that FD came, and you told them you didn’t want a plantation? Who was involved in that?
Appendix 3: Reaching Tala Raidiha

Coming over the crest just after Gonasika, the hill folds open up to show a valley where two streams meet and the borders of three villages come together. From this vantage point, bright yellow patches of raasi may pull the eye if you are there at the right season. They stick out, brilliant against the fallows, forest, and the brown leaves of a mature teak plantation cutting across the hills opposite in a long, thin rectangle.

A left turn will take you up hill to Guptaganga. Many travel this road to visit the centuries-old temple and the source of Baitarani river. The village sits high on the hills, overlooking Sathkandia Pidha. If instead you take a right, you will be led down a long road, crossing over the stream and around the curves patched with cultivation till you arrive at the small village Kadalibadi nestled in the foothills. From here, the most direct route to Tala Raidiha would be a climb over the mountain just between them.

But we are jeep-bound and are limited to roadways, so let’s travel straight, onwards towards Tala Raidiha. Last year, during cultivation season, there was rice paddy growing near the trikona, the place where the three village boundaries meet. This patch, named Phuldihi for its flowers, has been farmed by Guptaganga villagers for a few decades though it falls on Tala Raidiha’s side of the border. Across from Phuldihi is a skinny L-shaped teak plantation, long edge along the road, showing more than ten years of growth (“It was planted in this shape to appear more dense!” a Guptaganga villager theorized). Ahead, the winding road first ascends the hills, and then travels down towards the plains.

If you were to go ahead, on your left would be the sal forest. Deep inside are the plots which Tala Raidiha’s farmers hold titles for, despite not claiming these dense forests, let alone farming them. A bit further down the road, on your right, you would see a path to Purnadihi, the site of the ancestral village (and where forest rights claims were filed). Cleared to make room for cultivation, the teak trees planted there ten years ago continue to grow up like weeds around the mango tree marking the old durbar hall. And as you approach the final crest, don’t miss the old nursery, just a minute’s walk off the road. The saplings left behind when the community shut
down the plantation now stand as mature trees, crowded in the straight rows they were left in. At once a reminder, a haunting, a hope.

But let’s come back to where we are standing. What about Phuldihi? Two monumental trees mark the place. If last year was rice and millets, this year would be raasi, no doubt. Yet as our research team crossed over the small stream which marks the trikona of Guptaganga, Kadalibadi and Tala Raidiha, we didn’t see yellow fields. We saw thin saplings surrounded by pits of red earth, a grid stretching from the stream uphill to the crest of the hill. There were wispy fallows designated for clearing along the edges; squinting revealed that workers, sickle in hand, were on task. A small metal sign – Odia on one side and English on the other – announced the scheme, name, and size of the plantation. *Joda West Iron and Manganese Mine; 122.161 ha; 2017-2018*. Overwhelmed by the materialization of my research subject in front of my eyes, I scraped my brain for questions to ask the approaching managers, curious at our curiosity. But first, an observation from one of my research companions – *see there, mandia stalks are poking up in between the teak saplings. The millets have re-seeded from last year’s crop!*

A reminder, a haunting, a hope.

Appendix 4: Field Notes, Feeling the Land

*Beginnings*. The first few days, I was fumbling with my technology too much. Fumbling, I struggled to understand how to ‘capture’ everything. I was amazed how instantly an outsider can feel like an expert if you have a map.

Once I understood what teak looked like, I my gaze focused. I saw it everywhere. I was tuned to the brown, dead-looking leaves among the other trees, gazing towards the mountains, a bit away from the road. I would note every patch I saw. I didn’t feel the difference between plantation on private land, avenue plantation, or a CA plantation.

During my second field visit, my eyes only sought out boards and pillars. I would train my eyes on the areas near the road as we flew by them, darting around trying to spot concrete amongst the
crops, weeds, and trees. By the end of the day, I would have a headache from focusing on a short depth of field.

I didn’t feel the land, I was just looking for landmarks. Over time, I learned to see differently, be differently, and feel differently on the land.

*Seeing differently.* The shift happened after I mapped all the podu patches in Sathkandia Pidha. I circumscribed each one in Google Earth with a green polygon, for 2006 onwards. It took some time, inputting them manually one by one. When I revealed the composite outcome, they covered the landscape almost entirely. *I saw and I understood: this land is territory.*

Though I had evaluated the satellite imagery in great detail for hours upon hours, I saw it afresh. The polygon shapes held meaning, their conical outlines reflected the topography of the mountainous landscape. For the first time, I saw 3d forms from 2d imagery.

Now as I learn more about agriculture, I also see the past-present-future through the current landscape. Raasi now means cleared last year, and next year it will be dhaan. Fallow means it will be cleared sometime soon. Sal means people decided to leave it there.

I started to understand where podu patches were located, relative to each other, the village, and the hilltop. I started to learn their names, noticing nomenclature patterns like patches often being named for nearby streams.

*Being differently.* This taught me the importance of waterways. Before going to the field, my mentor told me that I would need topographic maps to see the rivers. I gathered them up, got them custom xeroxed, and brought them along, without understanding why. Once I saw differently, and began to focus on establishing village boundaries, both the toposheets and the (often dry) rivers on them became essential landmarks. Once I could read the toposheets, I again began to see the satellite imagery anew, as a watershed.

I tried to experiment with water. In my third or fourth research team combination, we decided to pack lunches from home. On the first day, when we started to feel hungry, one team member suggested we find a river. Upon arriving and collectively approaching the edge together, we bent
down to wash our faces and hands. I realized that refreshing ourselves and tidying up before tucking in was the reason for his preference, not a scenic value. I felt the change in my presence on the land, a different relationship to nourishing than I had experienced at restaurants.

After several days, at the Gonasika temple, I submerged my dusty feet in the pool for ‘ladies.’ For the first time that I can remember, I felt how special it was to have a giant pool of water. I experimented with trying to connect to the water, and felt nourishment as an exhausted, dusty guest.

*Thinking differently.* At some point I realized that revenue pattas are not infallible. This made me wonder how they became wrong in the first place—what series of relations, conversations, and decision-making produces an incorrect patta? The plots of land which were transferred from the revenue to the forest department started to feel like loss rather than factuality.

We stood at the top of the mountain, looking down upon the village, and I got a sense of the vastness of their territory. We stood at the village looking up at the mountain where we came down from, and it was redoubled.

*Feeling differently.* Combining the knowledge of the village boundary, the cultivation patterns and areas, the sets of intervillage relations that were involved in creating the landscape, I began to feel the land for the first time. After the trek to the Triguna, traveling up the hill from the Mandia plantation, I felt our vehicle come over the crest of the hill. Alternating between travelling slightly downhill parallel to the range, and perpendicular at a greater slope, I kept the shape of the hill present in my mind throughout. I *could feel the weight of the hills at my back, or towards my side, depending on which way we were traveling.* I was aware of how fast and how far we were going down the mountain, and aware of the topography. *My eyes were trained on nothing.* Sometimes I would look out the window, looking for the top of the mountain as a point of bearing.
Appendix 5: Additional tables and figures

Table 13: CA Flow chart from Comptroller and Auditor General report on Compensatory Afforestation (2013)

Chart 1: Flow chart of components of conditions for diversion of forest land for non forest purposes

Proposal for diversion of forest land

- Equivalent non forest land
- Afforestation on double the area of degraded forest land on the basis of NFL non availability certificate of the Chief Secretary

Land

- CA/ACA/PCA
- NPV
- CAT Plan

Fund

Compensatory Afforestation in lieu of diverted forest

NFL – Non Forest Land; CA – Compensatory Afforestation; ACA – Additional Compensatory Afforestation; PCA – Penal Compensatory Afforestation; NPV- Net Present Value; CAT – Catchment Area Treatment.
Table 14: Plantation data from Economic Survey Report (2017-2018)

<table>
<thead>
<tr>
<th>Year</th>
<th>AR in ha</th>
<th>ANR with Gap Pltn in ha</th>
<th>ANR without Gap Pltn in ha</th>
<th>Total in ha</th>
<th>Avenue Pltn in RKM</th>
<th>Seedlings planted in lakh</th>
<th>Seedlings distributed in lakh</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-11</td>
<td>70842</td>
<td>60084</td>
<td>102519</td>
<td>233445</td>
<td>241</td>
<td>1086.1</td>
<td>128.34</td>
</tr>
<tr>
<td>2011-12</td>
<td>22950</td>
<td>10291</td>
<td>148946</td>
<td>182187</td>
<td>769</td>
<td>358.92</td>
<td>195.92</td>
</tr>
<tr>
<td>2012-13</td>
<td>18603</td>
<td>20230</td>
<td>68454</td>
<td>107287</td>
<td>3107</td>
<td>321.66</td>
<td>211.92</td>
</tr>
<tr>
<td>2013-14</td>
<td>24966</td>
<td>38023</td>
<td>40296</td>
<td>103285</td>
<td>4506</td>
<td>467.53</td>
<td>304.14</td>
</tr>
<tr>
<td>2014-15</td>
<td>24600</td>
<td>60253</td>
<td>114038</td>
<td>198891</td>
<td>4755</td>
<td>692.17</td>
<td>550</td>
</tr>
<tr>
<td>2015-16</td>
<td>16576</td>
<td>98540</td>
<td>241975</td>
<td>357091</td>
<td>4607</td>
<td>487.98</td>
<td>460.96</td>
</tr>
<tr>
<td>2016-17</td>
<td>15322</td>
<td>127973</td>
<td>258121</td>
<td>401416</td>
<td>5838</td>
<td>497.75</td>
<td>376.57</td>
</tr>
<tr>
<td>2017-18*</td>
<td>5523.17</td>
<td>20366.94</td>
<td>208525</td>
<td>234415.07</td>
<td>3234.5</td>
<td>159.57</td>
<td>145.14</td>
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<tr>
<td>TOTAL</td>
<td>199382.2</td>
<td>435760.9</td>
<td>1182874</td>
<td>1818017.07</td>
<td>27057.5</td>
<td>4071.68</td>
<td>2372.99</td>
</tr>
</tbody>
</table>

www.odishaforest.in/en/afforestation
Table 15: Detailed Field Methodology

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Key Information collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation: Remote</td>
<td></td>
</tr>
<tr>
<td>1. E-Green Watch</td>
<td>- CA Plantation extent (polygon), timeline, and species selection as reported by FD,</td>
</tr>
<tr>
<td></td>
<td>- Project finances</td>
</tr>
<tr>
<td></td>
<td>- Forest Diversion project details</td>
</tr>
<tr>
<td>2. Forest Clearance website</td>
<td>- Proposed CA plantations according to UA including maps, land schedules, and polygons</td>
</tr>
<tr>
<td></td>
<td>- Physical verification reports from FD and RD,</td>
</tr>
<tr>
<td></td>
<td>- CA scheme from FD (when available)</td>
</tr>
<tr>
<td>3. Bhulekh (Land Records)</td>
<td>- Village map, plots and land categories (make into a layer for Google Earth)</td>
</tr>
<tr>
<td>4. Google Earth</td>
<td>- Historical satellite imagery of the site based on 1, 2, &amp; 3 above</td>
</tr>
<tr>
<td>5. Odisha Gazette</td>
<td>- Notifications of protected forests for plantation sites including dates, land schedule,</td>
</tr>
<tr>
<td></td>
<td>project details</td>
</tr>
<tr>
<td>6. Census, Scholarly Literature &amp;</td>
<td>- Census</td>
</tr>
<tr>
<td>Grey literature</td>
<td>- Scholarly literature – dissertations about history of Keonjhar and particular Adivasi</td>
</tr>
<tr>
<td></td>
<td>- communities, and grey literature/reports on afforestation, restoration, shifting</td>
</tr>
<tr>
<td></td>
<td>- cultivation, forest rights, etc.</td>
</tr>
<tr>
<td>Preparation: On-Site</td>
<td></td>
</tr>
<tr>
<td>7. Consultation with local CSOs</td>
<td>- History of conflicts and organizing in the region</td>
</tr>
<tr>
<td></td>
<td>- Key actors at the village level</td>
</tr>
<tr>
<td></td>
<td>- Shifting cultivation and livelihood practices among different communities in the</td>
</tr>
<tr>
<td></td>
<td>- region</td>
</tr>
<tr>
<td></td>
<td>- Status of relationships between communities and administration</td>
</tr>
<tr>
<td></td>
<td>- Status of Forest Rights Act implementation in the region and household level data (if</td>
</tr>
<tr>
<td></td>
<td>available) on Forest Rights titles</td>
</tr>
</tbody>
</table>
| 8. Field visits          | - Physical verification of spatial data from e-GreenWatch and Forest Clearance proposals  
|                         | - Identification of landmarks like signboards, pillars, commercial species plantation & GPS location |
| 9. Unplanned interviews with plantation workers/managers | - Plantation project/size  
|                         | - Awareness about the compensatory afforestation policies and purpose |
| **Initial Village Visits** | **10. Collective mapping through one-on-ones with key informants**  
|                         | - Description of traditional village boundaries  
|                         | - Names of key landmarks/shifting cultivation patches/areas  
|                         | - Plantation details/memories  
|                         | - Public opinion about plantation works  
|                         | - As much as possible: Timeline & locations for ALL plantations in a village  
|                         | - Status of FRA implementation and experience with FRA |
| **Territory walks** | **11. Small group accompaniment with GPS data collection**  
|                         | - Spatial data on case plantation extent  
|                         | - Visual observation of current plantation status  
|                         | - are trees standing?  
|                         | - Stories of plantation labor and impacts and reclamation stories,  
|                         | - Spatial data of various landmarks  
|                         | - Identification of shifting cultivation (household level plots) and individual forest rights (IFR) plots |
| **Detailed interviews** | **12. Village assembly**  
|                         | - Awareness about the historical/proposed plantations and CA policies  
|                         | - Knowledge exchange using map as a tool  
|                         | - Qualitative data on the impacts of the plantations on livelihoods and community response |
|                         | **13. Detailed interviews with key informants, including women**  
|                         | - Qualitative data on the impacts of the plantations on livelihoods at the household level  
|                         | - Qualitative data on traditional agroforestry practices and podu practices  
<p>|                         | - Livelihood game with 10 stones |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 14. CSO Reports + Detailed interviews | - Archives of petitions, demands, political briefs from historical activism/organizing by community members  
- Follow-up questions about CSO reports with CSO workers  
- Stories about community organizing and negotiation with local administration  
- Testimonies/Personal histories of struggle as CSO allies |
| 15. Interviews with local administration | - Forest department regarding implementation of compensatory afforestation policies in the division  
- Tribal Development Authority regarding the impacts of plantations on Adivasis and development in general |
| Analysis and follow-up | 16. FAC minutes | - Archives of project-wise data on forest clearance approvals, particularly regarding red flags perceived by the Forest Advisory Committee about different CA projects |
| 17. Legal analysis (review and interviews with lawyers) | - Legal review and analysis of laws and policies relating to forest clearance, forest notification, Adivasi self governance, forest rights  
- Interviews with lawyers about the legal implication of rights violations and legal strategy building |
| 18. Dialogue with state administration | - Official responses to some queries about compensatory afforestation site selection, notification, and policy implementation |
| 19. Case-specific media scan | - Legal history of the case and forest clearance for the projects implicated |
Appendix 6: Example of typologies of violations seen in satellite imagery

Example of plantation over agricultural lands (2010 and 2014; Balibo plantation, Odisha to compensate for Rengali dam)
Example of plantation over shifting cultivation lands.

Example of plantation after clearing natural growth (Andhra Pradesh)
Example of mystery landscaping in CA area (Karnataka)